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ABSTRACT

This document contains 18 papers from the human resource development and manpower training section of an international conference on vocational education and training (VET) for lifelong learning in the information era. The following papers are included: "Use of Social and Economic Modeling to Plan Vocational Education and Training" (David L. Passmore); "Retraining for the Unemployed--An Up-hill Battle That Never Ends" (S.S. Kwong); "Manpower Planning in Hong Kong" (Anthony Cheng); "Identifying and Responding to Skills Shortages" (David L. Passmore); "Analysis of Training Needs for Employees of International Five-Star Hotels in Taipei, Taiwan" (Shu-Hsaio Tsen); "An Evaluation on the Effectiveness of a 9-Month Intensive Full-Time Program for the Unemployed" (Che Keung Yeung, Yuet Kueng Cadbury Chan, Lai Ling Lilian Chow, Yuen Bing Leung, King Chung Joseph Chow); "An Examination of the Concept of Providing Leadership Development for All Students as an Integral Part of Classroom Instruction" (Jerome I. Leventhal); "Contingency Theory Is of Little Value in Helping Leaders or Potential Leaders to Perform Successfully" (Eric Cheng); "Continuing Professional Development towards Employee Empowerment in Manpower Training: A New Domain of Organisational Strategy" (Joseph S.L. Yip); "Assessment and Preparation of Career and Technical Education Teachers: Implications for Curriculum

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Development" (Victor K.A. Gbomita); "What's Happening in Your Teacher Education Program?" (C. Gloria Heberley); "Stress Management for Teachers in Vocational Education and Training Sector" (Gloria Ching Wah Chan); "Mining Labour Market Information for Use in Developing an IT (Information Technology) Manpower Predictive Model" (Gar-yun Garry Suen); "Training for Betterment: A Model for Training of Professionals in a Diverse Organisation" (Freidoon A. Khavarpour, Bruno Gelonesi); "E-Learning in Knowledge-Based Society" (P.F. Tsui, Ian K.M. Yue); "The Development of a Management Competency Model and a Development Centre" (Sara Wong); "Graph Theory, Job-Labour System and Manpower Planning" (Kwai Wing Leuung); and "Overview of Assessment and Quality Assurance on TVET (Technical and Vocational Education and Training) and a Proposal for Turkey" (Sabahattin Balci, Riza Gurbuz). Most papers contain substantial bibliographies. (MN)

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ED 446 245

Paper Presentations

Session B

Human Resource Development and Manpower Training

CE 080 845

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Vocational Education and Training for Life Long Learning in the Information Era

IVETA Conference 2000 Proceedings

Hong Kong

6 - 9 August 2000

USE OF SOCIAL AND ECONOMIC MODELING
TO PLAN VOCATIONAL EDUCATION AND TRAINING

David L. Passmore
Penn State University

Index: Economic Development, Manpower Training, Human Resource Planning, Socio-Technical Issues

Abstract: The Workforce Education and Development program at Penn State University applies input-output and social accounting models to provide information for planning vocational education and training. These models are specified, and several applications of these models to training investment research are described.

INTRODUCTION

Integration of vocational education and training investments with modern social and economic needs requires advanced analytic tools. Reviewed in this paper are uses of analytic tools applied in planning research conducted through the Workforce Education and Development (WF ED) Program at Penn State University. The WF ED program has applied these tools to analyses of the employment outlook in various occupations as an input to training investment decisions.

MODEL

The WF ED program has applied input-output and social accounting models in its research on the implications of employment growth and change for the need for training investment. A hybrid input–output and social accounting model, called the *Pennsylvania REMI Economic Model*, was prepared by Regional Economic Models, Inc. (REMI) from Amherst, Massachusetts, for use in economic and demographic modeling and forecasting by the WF ED program. In 1992, the *International Regional Science Review* wrote that REMI models are one of the "extraordinary successes in the history of regional modeling" and represent the "state of the art in multiregional econometric modeling practice."

The *Pennsylvania REMI Economic Model* tracks the complex interindustry relationships that deliver industrial output for personal consumption expenditures, government demand for goods and services, fixed investments, and domestic and international exports. It documents the role that these factors play in supporting jobs and income throughout the economy.

In a single source, the *Model* provides information about the performance of the Pennsylvania economy as well as unique in formation about the relative competitiveness of the Pennsylvania economy with the rest of the United States in terms of prices, costs, productivity, and profitability in 53 industrial sectors. Also available is demographic information about 202 age/sex groups. Detailed information is provided about taxes by source, transfer payments by type, and employment in 628 occupations. Moreover, information is available about the status of small businesses in the Commonwealth.

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The *Model* synthesizes information from many sources—to name a few: Bureau of Economic Analysis employment, wage, and personal income series, Bureau of Labor Statistics employment and wage data, and County Business Patterns data collected in conjunction with the Social Security program. The 1996 version of the Model contains historical data from 1969 through 1994 and allows forecasts from 1995 through 2035. Manipulation of several thousand *Model* variables allow simulation of the effects of policy, legislative, and natural changes on the Pennsylvania economy and demography.

Some WF ED applications of *the Pennsylvania REMI Economic Mode*l include studies of the: sensitivity of the economy of rural Pennsylvania to changing national defense expenditures; employment and income consequences of adopting California pollution standards in Pennsylvania; impact of vehicle emission testing; history and prospects for Pennsylvania manufacturing; economic outcomes of educational reform; economic impact of highway construction and use; structure of the Pennsylvania printing and publishing industry; effects of changing national health spending patterns on Pennsylvania health care and service employment; economic consequences of lowering teenage birth rates; effects of changing national infrastructure spending patterns on Pennsylvania construction employment; Pennsylvania impact of the 1994 baseball strike; and employment outlook for cosmetologists.

Shown in Figure 1 are the major paths of economic interrelationships endogenous to the *Pennsylvania REMI Economic Model.*

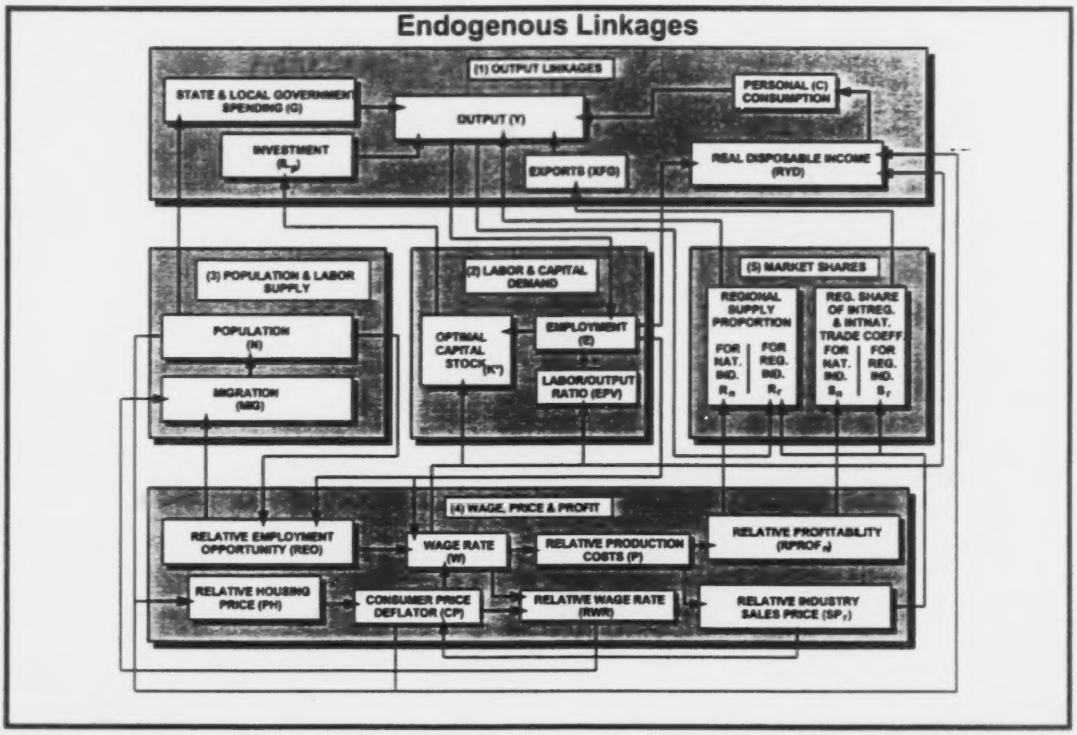
Endogenous Linkages
(1) OUTPUT LINKAGES
STATE & LOCAL GOVERNMENT SPENDING (G)
OUTPUT (Y)
PERSONAL (C) CONSUMPTION
INVESTMENT (R_p)
EXPORTS (XFG)
REAL DISPOSABLE INCOME (RYD)
(3) POPULATION & LABOR SUPPLY
POPULATION (N)
MIGRATION (MIG)
(2) LABOR & CAPITAL DEMAND
OPTIMAL CAPITAL STOCK (K*)
EMPLOYMENT (E)
LABOR/OUTPUT RATIO (EPV)
(5) MARKET SHARES
REGIONAL SUPPLY PROPORTION
FOR NAT. IND. R_n
FOR REG. IND. R_r
REG. SHARE OF INTREG. & INTNAT. TRADE COEFF.
FOR NAT. IND. S_n
FOR REG. IND. S_r
(4) WAGE, PRICE & PROFIT
RELATIVE EMPLOYMENT OPPORTUNITY (REO)
WAGE RATE (W)
RELATIVE PRODUCTION COSTS (P)
RELATIVE PROFITABILITY (RPROF_n)
RELATIVE HOUSING PRICE (PH)
CONSUMER PRICE DEFLATOR (CP)
RELATIVE WAGE RATE (RWR)
RELATIVE INDUSTRY SALES PRICE (SP_r)

Figure 1. *Endogenous Linkages in the* Pennsylvania REMI Economic Model *Among Economic Output, Labor & Capital Demand, Population & Labor Supply, Wages, Prices, & Profits, & Market Shares*

This figure summarizes a large number of simultaneous equations that form the mathematics of the *Model*. The *Model* contains five sections of equations:

- The output section of the *Model* (Block 1) accounts for economic output that is created by personal consumption, government spending, and fixed investment in Pennsylvania and net exports from the Commonwealth.
- The labor and capital demand section (Block 2) models demand for nonresidential structures and equipment. Cobb–Douglas production function technologies are used to model substitution between capital and labor and to determine the amount of labor needed to deliver an unit of economic output (i.e., labor intensity). Employment requirements are calculated by multiplying labor intensity by economic output (Block 1).
- The population and labor supply section (Block 3) accounts for ways the effects of demography on the economy as well as the effects of the economy on demography. For instance, the size of the Pennsylvania population affects government spending because many government services (e.g., health, education, and safety) are delivered on a per capita basis. Moreover, the size of the population is affected by economic conditions in Pennsylvania. For instance, migration into and out of Pennsylvania is affected employment opportunities and wage rates relative to the rest of the United States. The *Model* contains detailed algorithms for forecasting births, deaths, and migration due to net immigration, migration of retirees and former military personnel, and economic migrants.
- The wage, price and profit section of the *Model* (Block 4) determines wage rates, prices for regional and national industries, and profits for national industries. Pennsylvania wages relative to the rest of the U.S. are a function of, among other factors, relative employment opportunities and consumer price changes. The *Model* calculates costs of fuel, labor, capital, and intermediate products relative to the rest of the United States. Some business taxes are modeled as capital costs to industries. Profitability is affected by costs and selling prices. Relative profitability of Pennsylvania industries affects regional, interregional, and international market shares held by the industries.
- The market shares section of the *Model* (Block 5) are divided into two types: regional market shares and export shares. Regional shares are the proportion of Pennsylvania demand fulfilled by Pennsylvania industries. Export shares include domestic and international exports and are affected mostly by changes in production costs. Because firms do not move to Pennsylvania instantly as a result of changes in costs, the *Model* contains empirically estimated lags between cost changes and increases in exports shares. Increases in regional shares substitute Pennsylvania products for imports. Export shares include domestic and international exports and are affected mostly by changes in production costs.

These five sections are calculated for all 49 industrial and four governmental sectors of the *Model*.

AN EXAMPLE

The *Pennsylvania REMI Economic Model* is the analytic tool applied in over 20 studies by the WF ED program at Penn State that have implications for planning vocational education and training. One example of these studies, a study of the employment outlook for cosmetologists, is summarized.

Cosmetologists deliver personal services meant to help people appear presentable and attractive according to cultural norms. In this study, we investigated the employment outlook for cosmetologists. First, we forecast employment and job openings for cosmetologists in Pennsylvania from 1995 through 2005 using the *Pennsylvania REMI Economic Model*. This aspect of our study helps to verify whether jobs are anticipated for cosmetologists. However, employment forecasts are conditional estimates of employment given a particular pattern of economic activity. It is useful to consider whether an employment forecast varies with variations in general economic activity. Therefore, the second purpose of this study is to estimate the sensitivity of Pennsylvania cosmetology employment to changes in consumer spending as well as changes in the business environment as reflected in taxes and costs.

Shown in Table 1 is a forecast of Pennsylvania cosmetology employment from 1995 through 2005. We forecast average annual employment growth of 544 cosmetologists over this period. Not all employment of cosmetologists is in the beauty shop industry. Some cosmetologists work in other industries, including health care (nursing homes, hospitals) and retail stores (beauty shops owned by stores).

Table 1. *Forecast Of Employment Of Cosmetologists In Pennsylvania, 1995-2005*

	1995	2000	2005	Annual Average Change
All Industries				
Workers	49,158	52,226	54,056	544
5-Year Change		3,068	1,830	
Beauty shops				
Workers	45,348	47,997	49,526	464
5-Year Change		2,649	1,529	
Other Industries				
Workers	3,810	4,229	4,530	80
5-Year Change		419	301	

Source: 1995 PA REMI 53 SectorEconomic/Demographic Forecasting and Simulation Model

Displayed in Table 2 is a forecast of job openings between 1995 and 2005 for cosmetologists due to employment growth and need to replace cosmetologists who die, retire, or otherwise leave the occupation. On an annual basis, approximately one of every five job openings for cosmetologists is anticipated to occur because of the need for replacement.

Table 2. *Job Openings for Cosmetologists in Pennsylvania, 1995-2005*

	Total	Annualized Average
Growth	4,898	544
+ Replacement	1,022	114
Job Openings	5,920	658

Source: 1995 PA REMI 53 SectorEconomic Demographic Forecasting and Simulation Model

Table 3 contains deviations from the baseline forecast of cosmetology employment that are likely to result from changes in consumer spending and business taxes and costs.

Table 3. *Sensitivity Of Pennsylvania Employment In Cosmetology To Selected Economic Trends & Policy Changes, 1995-2005*

Trend Or Change	1995	2000	2005
	Forecast Without Policy Changes		
	49,158	52,226	54,056
	Difference from Baseline in Number of Workers		
Consumer Spending			
-1% In Total Consumer Spending	1,502	1,399	1,024
-1% In Other Services Spending	-1,149	-1,647	-2,293
- $10 MM In Personal Consumption	-1,884	-1,789	-1,443
Business Environment Taxes			
-1% In Total Business Taxes	2,026	1,937	1,591
-1% in Business Tax On Equipment	2,351	2,349	2,004
-1% in Business Tax On Property	2,696	2,730	2,381
Costs			
+1% In Investment Credit	-2,056	-1,981	-1,633
+1% In Total Production Cost	-981	-317	-339
+1% In Personal Service Production Cost	-1,871	-1,641	-1,235
+1% In Non-Wage Labor Cost For Personal Service Industry Only	-1,906	-1,696	-1,273
+1% In Non-Wage Labor Cost For All Industries	-1,616	-1,207	-671

Source: 1995 PA REMI 53 SectorEconomic/Demographic Forecasting and Simulation Model

As might be expected, decreases in consumer spending decrease cosmetology employment. One percent decreases in elements of this scenario are associated with between 2% to 4% reductions in cosmetology employment. Every reduction of $10 million dollars of personal consumption expenditures results in loss of between 3% and 4% of total cosmetology employment. One percent decreases in various business taxes increase employment by between 4% to 5%. On the other hand, a 1% increase in investment credits increases cosmetology employment between 3% to 4%. Increases in total as personal service industry production costs reduce cosmetology employment, as do increases in non-wage labor costs.

This study, then, demonstrates that approximately 650 annual openings were forecast for cosmetologists between 1995 and 2005. However, cosmetology employment is sensitive to a number of economic factors related to consumer spending as well as business taxes and costs. Caution and attention to economic factors are needed with decisions to enter cosmetology training, to provide cosmetology training, and to fund cosmetology training in Pennsylvania.

USES IN PLANNING

Occupational employment forecasts often are presented to policy-makers as single point estimates of the level of employment at some future date. However, all forecasts are conditional. Therefore, testing the sensitivity of forecasts to variations in their generating assumptions and conditions provides useful information about the risks and uncertainty embedded in using the single point estimates for planning purposes.

RETRAINING FOR THE UNEMPLOYED —
AN UP-HILL BATTLE THAT NEVER ENDS

S. S. Kwong, Executive Director
Employees Retraining Board
Hong Kong

Index: Unemployment, Retraining, Re-employment, Life-long Learning

Abstract: The Employees Retraining Board (ERB) has a mission to provide quality retraining courses and services to enhance the employability of the unemployed and potentially unemployed. Its main target groups include people aged 30 or above with lower secondary education and low skills. Through an extensive network of Training Bodies, ERB provides free full-time retraining courses for the unemployed and heavily subsidized part-time courses on basic skills for the target groups. Full-time courses are placement-tied. The ERB has achieved a remarkable placement rate of over 70%, as a result of strong supp ort from employers and trade associations, provision of quality multi-skilled training, and a comprehensive range of pre-training and post-training services. The ERB's long-term goal is to establish a competence-based Vocational Qualification Framework for Hong Kong.

BACKGROUND

Retraining of employees is extremely important both in times of economic downturn and prosperity, not only for the unemployed, but also for the potentially unemployed and those who need to up-keep their employability in the ever changing and competitive labour market.

The Hong Kong Government fully recognized the importance of retraining and established the Employees Retraining Board (ERB) as a statutory body in October 1992 under the Employees Retraining Ordinance. The ERB administers the Employees Retraining Scheme (ERS) and provide courses and services through a network of over 60 training bodies at 150 training centres throughout Hong Kong. Since its establishment, ERB has provided over 400,000 training places.

MISSION AND GOALS

In November 1998, ERB has reaffirmed its mission to provide quality retraining courses and services to enhance the employability of the unemployed and potentially unemployed to meet the needs of employers and the Hong Kong economy. It also has the goals of strengthening retrainees' learning ability and fostering a concept of life-long learning.

PRIMARY TARGETS AND TASKS

The ERB has the primary task of providing market-oriented and job specific training courses to equip the unemployed and potentially unemployed with the basic skills for re-employment. Its priority target groups are people aged 30 or above with no more than lower secondary education and low skill level. Such groups are most vulnerable in terms of employability and competitiveness in the labour market.

As many retrainees are the breadwinners in their families, ERB therefore offers short but highly focused full-time retraining courses for the unemployed to acquire the necessary skills for rejoining the labour force in the most cost-effective way. Full-time courses are free and for courses over one week or longer, retrainees will be paid a retraining allowance with no more than HK$4,000 a month to subsidize their travelling and meal expenses. The amount of retraining allowance is subject to review in order to avoid hampering retrainees' incentives to work while ensuring that it is adequate for them to continue with their training. The ERB also offers heavily subsidized part-time courses to help employees to upkeep their generic job skills such as basic computer application and basic vocational language skills so as to remain competitive in the labour market.

STRATEGIC PLAN AND NEW INITIATIVES

The ERB is a dynamic and market-driven organization. It constantly reviews its strategies to cope with changing labour market. In November 1998, ERB formulated a comprehensive strategic plan with new initiatives in six major areas, including: (i) Enhancing the quantity and quality of courses and services, (ii) Extend scope of services, (iii) Upkeep market intelligence, (iv) Strengthen partnership with employers and stakeholders, (v) Enhance cost effectiveness, and (vi) Foster positive corporate image. These new initiatives are summed up in Annex I.

New initiatives in the strategic plan have been implemented with remarkable progress. The achievements have been made possible with the involvement of ERB's working partners, including training bodies and employer / trade associations. For example, ten Course Steering Groups with representatives from training bodies have restructured and standardized major retraining courses in modular form, so as to improve their quality, pave way for common assessment and gain recognition by employers, course providers and stakeholders. At the same time, over ten Trade Advisory Groups with representatives from employers have been set up to seek their advice and feedback on courses and the latest labour market information. Such strategic partnership has not only enabled ERB to offer market-driven courses and services to meet the needs of its customers, but has also provided ERB with the latest labour market information to plan ahead to tackle future challenges.

CORE MODULES IN FULL-TIME COURSES

The ERB fully recognizes that in a rapidly changing economy, employees must be equipped with multi skills and knowledge in order to remain competitive and to meet the needs of employers. Multi-skills training has been included in all its full-time courses. Transferable skills such as soft skills, basic computer skill, vocational languages and occupational safety, health and environment have been incorporated as core modules besides essential modules on job-specific skills. To respond to employers' feedback, ERB courses pay special emphasis on soft skills such as work attitude, service culture, teamwork, communication skill, work commitment and job search skill. In addition, to keep in line with IT development, basic computer skill is also a must for full-time training to enhance retrainees' learning ability, access to information and application of computer skills in their jobs.

DIVERSIFICATION OF COURSES

The ERB has managed to modernize and professionalize traditional occupations such as domestic helpers, building attendants and hair stylists assistants, by introducing new elements of job specific skills and the four core modules. Such an approach opens up more job opportunities for the unemployed, particularly for those less educated and older ones.

To meet the need of a robust service and IT economy, ERB has developed and successfully piloted for full-scale implementation diversified market-driven courses such as IT Technical Assistants, Real Estate Agents, Life Insurance Agents and Building Service Craftsmen. All these courses have received favourable responses from both employers and the unemployed.

TAILOR-MADE COURSES

While ERB's courses turn out retrainees to meet the general needs of employers, it has placed heavy emphasis on developing Tailor-made Courses (TMC) to satisfy the specific needs of individual employers, groups of employers in certain trades, especially small and medium enterprises.

Tailor-made courses represent tripartite efforts of ERB, employers and training bodies in providing special training to the unemployed and in placing them into gainful employment with career prospects. Employers or trade associations involved in a TMC have to commit employment opportunities for the retrainees upon their satisfactory completion of the courses. Employers are heavily involved in the design and delivery of TMC. They also take part in recruitment of retrainees. They have to arrange site visits to let those who wish to apply for enrolment to have a better idea of the job nature and working environment before they make up their mind to apply for the course. Such arrangement should minimize subsequent dropout rates. Tailor-made courses have proven to be a great success with placement rate of over 80%.

PLACEMENT / FOLLOW-UP SERVICES

The ERB believes that it should not only provide retraining, but also follow-up services such as counseling and placement assistance to help the retrainees. All training bodies that offer full-time retraining courses have counseling and placement teams to help retrainees locate job opportunities and apply for jobs. Efforts of these placement and counseling teams, coupled with high quality market driven courses, have accounted for the high placement rate of over 70% for all retraining courses. To ensure that both employers and retrainees are satisfied with its services, ERB piloted a retention study in August/September 1999. 84% of the retrainees completed TMCs in January & February 1999 were found to have still remained employed and nearly half were still with the same employers. In future, retention surveys will be conducted for all tailor-made courses and regularly for all other full-time placement-tied courses.

To better serve its customers, ERB has set up a One-Stop-Service providing two service hotlines, one for employers to register job vacancies and another for the unemployed to enquire about courses.

RETRAINING RESOURCE CENTRES

Training and retraining is a continuous and life-long process for all. The ERB is convinced that life-long learning is especially important for the more vulnerable group of elderly workers with low education attainment and low skills. As ERB courses are normally of short duration, retrainee graduates may be helpless after placed into employment. The ERB has therefore set up Retraining Resource Centres (RRC) in various strategic locations of the territory to provide a comprehensive range of services, including pre-training and post-training counseling and follow-up services, latest market information, self-learning facilities and one-stop services for ERB retrainees, the unemployed and others in need of such services. The first two RRCs have been set up in December 1999 and March 2000 in Jordan and Lok Fu respectively. More RRCs will be set up in strategic locations throughout Hong Kong in the next few years.

THE WAY AHEAD

Retraining the unemployed, especially the more vulnerable group of elderly worker with low education and low skills to re-enter the labour market is an uphill battle. In times of economic downturn, the importance of retraining for re-employment is crystal clear. Yet even in times of prosperity, retraining is still indispensable for helping rectify the mismatch of the labour market and upkeep the employability and competitiveness of our labour force. This is particularly true in the era of rapid IT development in Hong Kong. As Hong Kong transforms into an IT and high-tech economy, the employment prospects for the more vulnerable groups appears gloomy. Without proper retraining, these workers will paradoxically be the victims of future economic prosperity. The ERB will therefore have a great challenge ahead to retrain these workers to acquire the necessary skills and knowledge to enhance their employability. These groups of workers who have been deprived of the opportunity to be benefited from the traditional education system should be provided with an alternative route for skill upgrading and career advancement.

VOCATIONAL QUALIFICATION FRAMEWORK

The long-term goal of ERB therefore is to establish a continuous and preventive training system to minimize unemployment and a competence-based Vocational Qualifications Framework for Hong Kong. The aim is to offer an alternative route to enhance the skills and life-long learning opportunities for employees who may not have the chance to benefit from the traditional education system. The ERB has been working with the Education and Manpower Bureau and the Vocational Training Council in formulating such a framework.

The ERB is not complacent with its achievements. It will strive for doing more and better to meet the needs of its customers and stakeholders – in particular employers and the unemployed. The ERB welcomes the opportunities to collaborate with employers, course providers, professional bodies, Government and all stakeholders to work for the betterment of our workforce and the Hong Kong economy in the new millenium.

Annex I

EMPLOYEES RETRAINING BOARD

MISSION

To provide quality retraining courses and services to the unemployed and potentially unemployed in order to enhance their employability and meet the needs of employers and the Hong Kong economy.

MAIN GOAL

To achieve total customer satisfaction of the unemployed, potentially unemployed, employers and stakeholders.

Strategies (Key elements: Market-driven, Value-added, Proactive, Flexible, TQM)

*Initiatives and Workplan for 1998/2001 (those with * will require policy decision, the rest have been approved for implementation)*

Enhance Quantity and Quality of Courses and Services

- Increase training capacity of TBs
- Buy training places from training providers
- * Review selection criteria of TBs and training centres
- Review evaluation system and performance indicators for TBs
- Seek recognition of ERB courses
- Include 'soft skills' training, IT and vocational language for each course
- Diversify types of courses and skills levels
- Provide more tailor-made courses
- Establish course steering groups and sectoral advisory committees
- Standardize similar courses of TBs and upgrade their quality
- Repackage training courses in modular forms
- Provide intensive follow-up and placement services to retrainees
- Enhance training of TB trainers and counter staff

Extend Scope of Services

- * Extend courses services to all unemployed, irrespective of age, education level etc.
- * Relax 70% placement target for all courses except tailor-made courses
- Strengthen pre-training counseling services
- Establish Resource Centres
- Extend opening hours of ERB enquiry counter
- Strengthen One-Stop Service
- Offer proactively ERB services to newly or potentially retrenched employees

Upkeep Market Intelligence

- Strengthen labour market analysis
- Collate and analyze existing labour market statistics and information
- Study manpower needs in specific industries
- Conduct researches to evaluate courses and services
- Network and obtain feedback from employers, TBs and all possible sources
- Share analyzed labour market information with other users

Strengthen Partnership with Employers & Stakeholders

- Maintain close liaison with employer/ professional associations by being their corporate members
- Include employer associations as TBs
- Set up sectoral advisory committees
- Establish regular forums with major employer associations
- Enhance communication and strategic partnership with TBs
- Maintain close co-operation with trade unions, community and welfare agencies
- Strengthen co-operation with government departments e.g. Labour, Social Welfare.

Enhance Cost Effectiveness

- Strengthen financial and auditing process of TBs
- Re-design budgeting cycle and unit costs
- Issue and update course administration and accounting manuals for TBs
- Computerize the provisions of courses and services
- Strengthen Executive Office's secretariat services
- Strengthen Executive Office's internal administration and financial management
- Strengthen staff training and development to enhance efficiency and productivity

Foster Positive Corporate Image

- Enhance corporate image
- Reposition ERB's role
- Increase ERB's transparency
- Set performance pledge
- Set guidelines for designing, equipping and packaging TBs' training centres with better image
- Liaise closely with mass media and interested parties
- Promote courses and services through publications, the press, electronic media, exhibitions and seminars

***Long-term Objectives**: Establish a continuous and preventive training system to minimize unemployment and a Vocational Qualification Framework for Hong Kong*

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MANPOWER PLANNING IN HONG KONG

Anthony Cheng
Vocational Training Council

Index: Manpower Requirement Approach (MRA), Labour Market Analysis (LMA)

Abstract:

1. VTC has been using the Manpower Requirement Approach (MRA) for projecting disaggregate sectoral employment by skill/occupational group. The whole exercise comprises isolated studies of the 25 economic sectors based on employers' perception of possible trends.
2. Labour Market Analysis (LMA) differs from MRA in terms of both focus and data requirements. LMA focuses on information from all players in the labour market, uses primary as well as other available secondary data, and analyzes data using also econometric models.
3. For consistency, the Task Force has conceptualized an LMA framework, outlined as:

Level One	*Aggregate Economic Level.*
Level Two	*Aggregate Labour Market Level.*
Level Three	*Disaggregate Labour Market Level.*

1. The planning of courses and training provisions must be related to future industry needs. However, the assessment of future manpower demand is not an easy task. Manpower projections inevitably involve the exercise of expert judgement based on available historical data.

2. The Vocational Training Council (VTC) has a rolling programme of manpower surveys. Since 1982, its respective Training Boards and General Committees (TBs/GCs) have been conducting industry-specific manpower surveys on a two or three-year cycle for some 25 economic sectors. The technical workforce covered by VTC's manpower surveys is about 2,055,000, i.e. about 80% of the total number of employed technical persons in all sectors. The four major sectors not covered are Medical, Social Welfare, Personal Services and Education.

3. VTC uses a computer program, called Adaptive Filtering Method (AFM), to project manpower for several possible scenarios. The program generates a series of curves and obtains optimum curve fitting by adjusting the value of a parameter A to alter the smoothing constant (1 - A). Basing on the series of curves and taking into consideration other socio-economical factors, TBs/GCs analyze and select the most probable manpower demand projection.

4. AFM is simple to apply and requires few data points. Its basic assumptions are: a high level of economic activities/employment, a continuation of technological advance, and the absence of war or other cataclysmic events. Advocates of AFM have argued that planners can take the various socio-economic factors into account during their selection of the most probable manpower growth/decline projections. Nevertheless, critics of its use contend that the use of only historical data for projection purpose has its limitations.

5. Guided by the projected manpower demand, course planners within VTC will submit proposed course plans to the respective Departmental Advisory Boards for IVE courses and to TBs/GCs for ITC courses. The consolidated course plan will finally go to the Council and then the Education and Manpower Bureau (EMB) for their policy decisions.

6. Throughout the various levels, there are constant inputs from experts in the respective economic sectors to ensure that approved course plan has taken into consideration other data and the overall economic situations plus social, technological and other changes; e.g. data collected by IVE/ITCs on planned places, enrolment figures, progression rates, placement rates etc.

7. The current manpower survey methodology by VTC is referred to as Manpower Requirement Approach (MRA) (Abegaz, 1994). Its three main steps are:

7.1 to project the demand for manpower,

7.2 to project the supply of manpower, and

7.3 to match demand with supply.

8. The economic and management consultants, Segal Quince Wicksteed (SQW), has commented that VTC's approach cannot be used to detect problems due to labour market restructuring and its effect on in-service workers. In the absence of an explicit model with determinants (independent variables) for supplementary analysis, SQW doubts whether manpower planners can actually consider the impact of the various socio-economic factors. SQW is however unconvinced that the extrapolations by any straightforward 'curve fitting' method can do so.

9. In October 1998, VTC set up a Task Force to explore the possibility of using Labour Market Analysis (LMA) in manpower planning. At about the same time, the EMB had commissioned a consultant firm to undertake a study of the best overseas practices with a view to finding out a manpower forecasting model best suited to Hong Kong. Among others, the firm has recommended in its draft report that VTC should focus on short-term industry-specific manpower projections.

10. Since inception, the VTC Task Force has reviewed the present manpower survey methodology, including survey design, questionnaire, and the dissemination of survey results. It has also studied in some detail three other 'curve fitting' methods: the ANN (Artificial Neural Network) Model, the multivariate models, and the ARIMA (Autoregressive Integrated Moving Average) applications.

11. After trial-runs using three sets of historical manpower data collected for three different economic sectors (viz. accountancy, sheet metal and IT), the Task Force concluded that the number of data sets available is too small to warrant any further test. The Task Force has however agreed that AFM is basically a special case of the ARIMA model. It is not as comprehensive as the other available statistical tools that are based on more well-developed statistical theories.

12. At present, VTC surveys are stand-alone. There are few common central assumptions with respect to VTC's other projects and government studies. For better coordination and consistency, the Task Force has conceptualized an LMA framework as follows:

Level One	*Aggregate Economic Level. Key economic/financial indicators that reflect the general health and stability of the economy and that may have an effect on the labour market in the long, medium and short terms*
Level Two	*Aggregate Labour Market Level. Structural factors of the labour market, including increase in labour force and economic structural changes, sectoral shift, cyclical unemployment, demographic structure and its effects in the long, medium and short terms.*
Level Three	*Disaggregate Labour Market Level. Industry-specific demand and supply analyses in the medium and short terms.*

13. The Framework reflects the interdependence of labour and economic performance, the cross-sectoral influence, and the supply- and demand-side determinants. Thus, it will provide the missing links between MRA, and quantitative econometric and manpower models.

14. Labour market behaves in many ways like other markets. Its supply side is the 'employees' and its demand side, the 'employers'. The 'product to be sold' is employees' service, and 'the price to be paid' is the salary and wage plus the terms and conditions of service. Other major players in the labour market include the government, employers' associations and trade unions.

15. Like other types of market, labour market is neither 'perfect' nor 'efficient'; but the speedy dissemination of information and mobility of people in terms of geographic and economic sectors can make the market more efficient. Labour market mechanism also obeys 'the law of demand and supply' and 'the law of diminishing returns' in the determination of prices.

16. LMA approach differs from MRA in terms of both focus and data requirements. It stresses that planning for education and skills development should be based on signals from the labour market. As regards focus, information comes **not only** from an amalgamation of employers' perceptions of possible trends, **but also** from other players in the labour market. As regards data, LMA requires, for its comparative analysis of survey findings, the collection of a wide range of data from published sources and earlier surveys, the broad and sectoral labour trends, and other available secondary data. As regards the types of data, LMA needs determinants such as those associated with labour market flexibility because these determinants affect participation and unemployment rates significantly.

17. LMA approach also entails a much stronger focus on the synthesis and interpretation of data in current and previous surveys, the actual patterns of demand in relation to survey forecasts, use of trend analysis and econometric models, wider consultation and discussion within industrial and commercial sectors before drawing any conclusions. It must be pointed out also that econometric models require regular maintenance. For example, the forecasting model based on the theory of the non-accelerating inflation rate of unemployment (NAIRU) in the USA is no longer valid in the sense that there is a change relationship; as is distinct from a relationship breakdown in the model.

18. Since the outcome of LMA includes employment and unemployment trends, sectoral breakdown of employment, future requirements and supply in terms of manpower, vacancy and skill, and the application of mathematical models; the LMA approach will enable VTC to plan more strategically. Planners can explore data, fit models, discover patterns, discover points that do not fit patterns, develop scenarios, assess key sensitivities, define and defend strategic priorities, monitor achievables against objectives, and feedback the learning outcomes into future planning cycles (SQW, 1996).

19. The complex US model by the Bureau of Labour Statistics (Lee, 1999) and Finnish 'Labour Force Model' by Dr. P. Tianen (1990) are based on LMA. Other developing economies are increasingly adopting LMA. In emerging economies, however, ILO's simple trend analysis model remains popular.

20. The Task Force will be implementing the LMA process through the acquisition of a **data warehouse**. This piece of equipment will provide a broad canvass of social, economic and labour market data/information for each of the major economic sectors. It is an information delivery system consisting of a blend of hardware, software, business knowledge, and systems integration skills. Typically, the data warehouse environment comprises three areas: primary manpower database; extraction and transformation of data from external data sources; and software tools for data analysis.

21. Data warehouse serves two useful purposes: analytical and decision support, and consolidation of data across many sources. Once set up, the warehouse will become the platform for all future data processing purposes: e.g. trend analysis, regression analysis, analysis using existing econometric or labour market models, and model building and evaluation. Suitable models for the local labour market can be explored and developed. The labour market information derived can also be rapidly disseminated.

22. In addition to the LMA framework and data warehouse, other improvement recommended by the Task Force includes: the reduction of all questionnaires to two types: standard and non-standard. The standard questionnaire will collect essential quantitative data such as the number of employees, vacancies, trainees, and salary range in the sector. The non-standard one refers to opinion survey questions and other qualitative questions specific to the economic sectors; e.g. demand for in-house and external training, the priority of training courses required by the respondent etc.

23. As regards dissemination, information on medium-term labour supply composition by age, skill levels, education and need for training or retraining will be included, with potential users' requirements in mind, e.g. employers, academics, human resources managers and government officials. Pictorial representation and coloured charts in addition to tables will be used as far as possible in all publications. In addition to press release, publication, reports, fax-on-demand, CD ROMs, and Internet, VTC will also disseminate its manpower survey findings using data warehousing technique in order that potential users can do their own analysis of the available data from different sources.

24. The Task Force realizes that LMA is only a very powerful tool for manpower planning purpose. It is not a panacea for all economic problems. LMA must be used with discretion and with an eye on the general direction of the latest economic developments and government economic, social and manpower policies.

25. From the manpower trends and in response to the latest social and economic developments, VTC will adopt the following measures:

(a) *to reform all craft courses to upgrade low skills to a higher skill level;*

(b) *to introduce more technician courses;*

(c) *to shift emphasis from manufacturing to services sectors;*

(d) *to strengthen in-service and up-grading training;*

(e) *to make training programmes more flexible;*

(f) *to introduce more specialized training in IT, banking, insurance, accountancy and also Chinese cuisine;*

(g) *introduce trade testing and certification system for more trades; and,*

(h) *introduce tailor-made course for those less academically inclined S5 school leavers.*

26. While VTC will endeavor to provide sufficient labour market information to all course planners; it can only accomplish its part at the vocational education and training level. There is the need for concerted efforts of the various players in the labour market to make things happen. For example, the HKSAR government is determined to be the catalyst for sustaining a highly efficient trading, marketing and financial services infrastructure. It has also in its budget allowed for substantial increase for training and retraining. Furthermore, in a report on the long-term economic development for the next thirty years, the government has laid down four major strategies, seven key industrial sectors and six challenges. In other words, the government has set very clear direction for the future manpower planning for HK.

27. The business sector must respond by spending more on research and development, invest in high technology, and start up new ventures to inject momentum to the local economic and create more employment opportunities as restructuring continues. As an example, the IT and other new technologies sectors have created 45 millions jobs in USA from 1970 to 1997.

28. Higher education and management association must enhance the skills of senior and middle management. There is also the need to focus on multi-skill, core training and re-training in order to enhance the mobility of the labour force across different economic sectors; and the need to strengthen job matching between training and vacancies. In addition, Hong Kong should perhaps seriously consider the introduction of a vocational qualification framework to give due recognition to vocational education and training and to boost labour flexibility has already been practised by several economic superpowers.

29. To conclude, manpower projections provide some useful clues to both economic and manpower planners as to what, when and how action must be taken in order to slow down, stop or oven reverse downward trends in manpower demand. If manpower projections can help planners to made the right decisions to sustain reasonable economic growth and high employment rate, then all the objectives of manpower planning are considered to have been achieved.

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IDENTIFYING AND RESPONDING TO SKILLS SHORTAGES

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Index: Planning Issues, Assessment and Recognition Systems, Trends and Impacts on Training

Abstract: Skills shortages limit economic growth. Tight labor markets in the United States have highlighted for policy–makers the problems that skills shortages create for the economy. Yet, it is difficult to document and respond to skills shortages. No single, direct measure identifies a skills shortage. Identification requires multiple economic indicators. When skills shortages are identified, prescription of responses to alleviate shortages is equally problematic. Selection of investment in training as one response requires that other factors affecting labor supply and price must be ruled out as contributing causes of shortages.

INTRODUCTION

An adequate supply of human capital is essential to the smooth functioning of any economy, especially as economies are becoming more skill-based than ever. The skills of workers contributed more than a quarter of all growth in labor productivity during the 1990s in the United States (U.S. Department of Labor, 1999). Investment in the creation and maintenance of human capital especially is important to sustain this growth.

Concern is evident, however, that the supply of human capital in the United States is inadequate to meet current and future needs. Labor markets are tight. Unemployment for the entire United States during 1999 was at its lowest rate in 28 years (U.S. Department of Labor, 1999), and the unemployment rate was below 4% in nearly one-half of the nation's metropolitan areas (Koropeckyj, 1999). The Board of Governors of the Federal Reserve Bank (1999), the central bank of the United States, noted that, "The demand for labor continues to outstrip the readily available supply of labor in most areas….tight labor markets remain the norm." Most regions of the United States reported widespread labor shortages during the third quarter of 1999, continuing a pattern observed over several years. Retail sales, manufacturing, and construction sectors of the economy have experienced the most difficulty filling job vacancies.

Training is often seen as one solution to skill shortages. Prerequisite to investment in training motivated to meet skill shortages is however, the validation that skill shortages, indeed, exist. And, if shortages are verified, then training is but one prescription for curing problems realized from shortages. In this paper, I review methodology for identifying skill shortages in labor markets. In brief, no single method is available for identifying skill shortages. Rather, evidence is needed from multiple points of view. Also, I discuss the variety of policy and program responses to skill shortages possible in addition to training investment. As with diagnosing the existence of skill shortages, prescribing solutions to shortages is difficult and uncertain.

IDENTIFICATION

According to Veneri (1999), "Shortages occur in a market economy when the demand for workers…is greater than the supply of workers who are qualified, available, and willing to do [a] job" (p. 15 at prevailing wages. No single data source exists to measure skill shortages. Rather, labor market data often are used to corroborate anecdotal reports from employers and other observers and analysts.

Blank and Stigler (1957) found three definitions in use for defining skills shortages:

1. In what Blank and Stigler (1957, p.23) described as the "social demand" definition, which determines that a shortage exists if the number of workers is less than the number needed. For example, a shortage of physicians would exist if the number of physicians per 100,000 people was less than the number that planners and other experts believe is needed to adequately treat the population.
2. Another definition offered by Blank and Stigler (1957, p. 23) indicated that a shortage exists if the quantity of labor that is demanded is greater than the quantity supplied at the prevailing wage. This definition takes a cross-sectional point of view tro define the shortage.
3. Still another definition provided by Blank and Stigler (1957, pp. 23–24) takes a longitudinal perspective. From this point of view, a shortage exists when the number of worker available increases less rapidly than the number of workers needed at the salaries paid in the recent past. Blank and Stigler (1957, p. 24) asserted that one consequence of a shortage defined in this way is that substitution of labor inputs will occur from one skill level to another. For instance, rising salaries might not increase the supply of registered nurses, but might stimulate the substitution of practical nurses or health care aides for more highly trained and credentialed registered nurses.

Arrow and Capron (1959) introduced the concept of a "dynamic shortage" (p. 301) to extend the Blank and Stigler definition by describing a labor market in which demand continually outpaces supply. Conditions for a dynamic shortage include rapid and continuing increase in demand for a skill set, low elasticity of supply (low responsiveness of supply to wage changes), and sluggish adjustment of wages to market signals. The last condition is a recognition of imperfections in information in labor markets.

Frank and Sobel (1970) focused on institutional constraints as additional market imperfections creating skill shortages to explain how shortages could exist at the same time as high levels of unemployment and worker displacement. They defined a shortage as "a situation existing over an extended period of time in which employers were unable to hire at going wages or salaries sufficient numbers of qualified persons to fill positions for which there were budgeted funds and for which personnel were required to meet existing demands for services (Frank & Sobel, 1970, p. 7). Based upon their analyses of six occupations in the Chicago and St. Louis labor markets during the mid–1960s, they concluded that market pressures often were insufficient to increase supply. They concluded that wage changes, by themselves, were weak policy instruments for reducing shortages.

More recent studies by Cohen (1995) and Trutko, Barnow, Chasanov, and Pande (1993) have taken the approach that no single empirical measure of skill shortages exists. More likely, none is likely to be developed (Veneri, 1999, p. 17). Instead, a variety of indirect indicators, many statistical and some anecdotal, are assessed to investigate the existence or potential of a skill shortage. For instance, Cohen (1995, pp. 29–39) recommends the use of the following indicators:

1. Occupational unemployment rate—This indicator is something of a misnomer because a person cannot be in an occupation and unemployed. Instead, this indicator refers to the last or most

recent occupation of the unemployed person. Clearly, the unemployed might seek jobs in any occupation, not just the one from which they separated.

2. Averaged changes in occupational employment—This indicator reflects the trend in the demand for labor.
3. Weekly wage changes for full-time workers in an occupation—This indicator reflects the intersection of supply as well as demand conditions. However, most wage data are collected for all workers, not merely new hires whose wages might reveal market effects of a shortage more than for tenured workers.
4. Forecasted occupational employment growth—Such a forecast is conditioned on assumptions and changes about future economic structure. Comparisons are made between likely occupational supply and forecasted employment.
5. Forecasted occupational replacement openings—Job openings in occupations are due to employment growth and the need to replace workers who die, retire, or otherwise leave the occupation. Existence of openings indicates a shortage.
6. Aliens receiving labor certifications—This indicator tracks foreign–born, non–U.S. born workers receiving permanent labor certification allowing immigration for work in the United States. The major advantage of this indicator is that it summarizes independent determinations made on thousands of cases in which employers assertthey cannot find and hire citizens of the United States.

RESPONSE

Is the identification of evidence for a skills shortage sufficient to justify investment in training to alleviate the shortage? Certainly not by itself. Other alternatives to training investment are possible and need to be considered as training policy is specified.

Perhaps wages offered are inadequate to ensure an adequate supply of human capital. However, as Frank and Sobel (1970) observed, labor markets often a slow to respond to wage changes. Improving working conditions is another alternative. For instance, perhaps more and higher quality school teacher would seek teaching employment if the workplace of the school was less autocratic and bureaucratic. Also, non–wage compensation such as benefits and other amenities might help improve supply. For example, Santa Clara County in California, the home of Silicon Valley, is finding it hard to attract teachers because housing is priced too high to be affordable on teachers' salaries. Therefore, under consideration is the development of teachers' housing (described by some as "teacher ghettos") that would be subsidized partially or completely.

Among the other options available for alleviating identified labor shortages include:

1. Making it easier and more attractive for older worker to choose not to retire,
2. Enticing skills immigrants and relaxing immigration restrictions for skilled workers in demand,
3. Inducing workers currently out of the labor force to re–enter,
4. Substituting workers with similar or transferable skills to enter the occupation which has a short supply of workers,
5. Reducing barriers to entry into occupations by relaxing credentialing and licensing requirements that are not shown to be essential for job performance, and
6. Encouraging geographic mobility of workers within the country to regions with skill shortages.

CONCLUSION

No single source of information provides evidence for the existence of a skills shortage. Rather, multiple, indirect indicators using existing data might represent the best source of information available. Even if a skills shortage is identified, training is only one solution among many that are possible to alleviate the shortage.

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ANALYSIS OF TRAINING NEEDS FOR EMPLOYEES OF INTERNATIONAL FIVE-STAR HOTELS IN TAIPEI, TAIWAN

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Index: Training and development, employee training, training program, human resource management, manpower development

Abstract: The main purpose of this study is to explore the training demands of the employees working at the international five-star hotel in Taipei. The study is based on the questionnaire to those who work at four Taipei's international hotels and their departments, such as Front Desk Department, Food & Beverage Department and Room Department, are frequently interactive with their customers.

INTRODUCTION

There are many reasons driving the HRD to harmony with the strategic business plans, and HR plans. The purpose of HRD is the fundamental reason for organizational existence. As following:

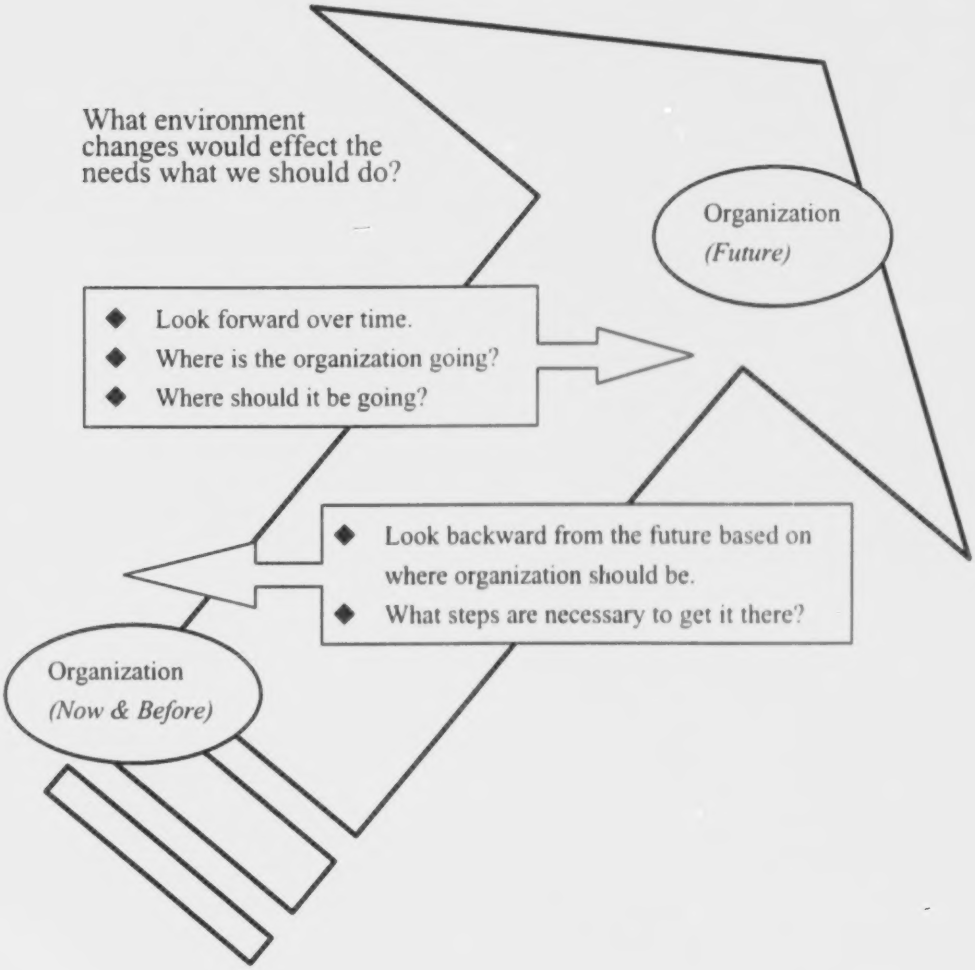
The purpose of human resource management

- HRD can be driven by organizational and Hr plans,
- HRD can be driven by perceived learning needs of managers and employees.
- HRD can be driven by comparisons between organizational plans and individual objects.
- HRD can act as a tool for aiding top management strategists define business and HR plans.
- HRD furnishes learners with artificial experience tied to organizational and HR plans.
- HRD provides feedback about implementation of plans in subsequent planning.
- HRD provides information to strategists about organizational strengths and weaknesses.
- HRD serves the inarticulated needs and interests of strategist.
- HRD shows people how to think strategically.
- HRD focuses on specific issues, problems, or projects of significant strategy to organization.

Identifying future learning needs

The significant keys in environmental scanning for human resource management, is to anticipate future learning needs based on present trends. Beginning with a broad overview of the future-oriented needs assessment, we will know how future-oriented needs can relate with the external groups like general public, consumers, suppliers, and distributors, and internal groups like people in workplace, individuals, and jog categories.

Future What environment changes would effect the needs what we should do?


What environment changes would effect the needs what we should do?

- Look forward over time.
- Where is the organization going?
- Where should it be going?

- Look backward from the future based on where organization should be.
- What steps are necessary to get it there?

The purpose and method of the study

The main purpose of this study is to explore the training demands of the employees working at the international five-star hotel in Taipei. The study is based on the questionnaire to those who work at four Taipei's international hotels and their departments, such as Front Desk Department, Food & Beverage Department and Room Department, are frequently interactive with their customers.

There were 300 copies of the questionnaires had been distributed and 257 of them returned with the effective rate of 85.6%.

Discovery of Study

1. Characteristics of people taking the questionnaire

   Sex : Mostly female
   Age : First – 31~40 Second – 21~30
   Education : First – Senior High School Second – Junior High School & Junior College (Most not related to Tourism)
   Department Classification:
   Front Desk Department – 40%
   Food & Beverage Department – 35%
   Room Department – 25%
   Position : Basic Level Workers – 74%
   Work Experience under 5 years: 84%
   (Most of them do not have long work experience in this industry)

2. Generally, the hotel employees have the demand for Professional Knowledge most. Second is Management Knowledge/Skills. Not too many people want to know Tourism related Knowledge & Information.

3. Individual backgrounds influence employees' training demands strongly

   (1) The employees of Front Desk Department commonly have higher training demands for Professional Knowledge, Management Knowledge/Skills and Tourism related Knowledge & Information – much higher than Food & Beverage Department and Room Department.

   (2) The training demands of the basic level workers are generally higher than those of supervisors

   (3) The training demands of the employees whose work under 5 years are higher than those of employees whose work experience between 5 and 10 years.

   (4) Male employees show higher training demands than female ones on all other courses, except language (English / Japanese), personal communication skill, hotel developing plan & external advanced training.

   (5) The younger employees are more eagerly to know Tourism related Knowledge & Information

   (6) The junior college graduates have higher demands for all categories knowledge than the high school graduates.

   (7) No matter they are the tourism education background or not, their knowledge demands are no big difference except computer courses, dining & menu design and human resource planning & management.

4. Individual point of view & evaluation for training activities

   (1) The employees of Front Desk Department think that the training courses are beneficial to the current / future jobs and also satisfied to the current training relatively.

   (2) The attitude of basic level workers to the training is positive and good for the future jobs & promotion. Their satisfaction and voluntary orientation of training are higher, too.

   (3) The less experience employees think that the training will help them on the current jobs and future promotion. They are more willing to attend the training than the more experience employees and mostly voluntary.

(4) Male employees show more affirmative attitude than female ones to the benefit of training for the current jobs and voluntary attending the training.

(5) The employees whose ages above 36 think that training are more beneficial to self-developing. The age 26 ~ 30 group has the highest rate of training attendance.

(6) The higher education they are, the higher affirmation of training to the current jobs they have, same as the voluntary attendance of training.

(7) Most of the employees' evaluation and opinions for the training are similar – good for self-developing, no matter what kind of education backgrounds they are.

5. Priority of training forms – for future duties, periodic training, non-periodic training

The employees are very glad to attend those training that will benefit to their current jobs and future duties. Periodic & Non-periodic trainings provide the knowledge/skills for their routine operation, and also to catch up the fast step of the hospitality industry. Most of the employees' education backgrounds are not tourism; it is necessary to provide the certain training courses by the corporate.

6. The employees who like to attend the training are more satisfied about the courses and also more voluntary to receiving the training.

7. Other discovery – Room Department: Most unique department at hotel

(1) The majority of members of Room Department are aged female employees. Because of the special characteristics of their work contents and skills, it is very hard to alternate their works with other departments. They have relatively lower demands for training than other two departments.

(2) Generally, they have longer work experience and lower resignation rate than those ones at other two departments. It seems contradictive to the hypothesis – "the more training, the less resignation" in the study. Then we find out the reasons and explanation. The work contents of Room Department require the employee with special knowledge & skills but monotonous, containing a lot of labors. The elder employees are more stable than the younger ones.

CONCLUSION

1. Professional knowledge/skills related to current/future jobs are the most important demand of training
2. Individual backgrounds influence employees' training demands strongly
3. Age, work experience & sex influence employees' point of view & evaluation to training
4. Substantial gap exists between reaction and satisfaction to training
5. The employees who like to attend the training are more satisfied about the training courses and also more voluntary to receiving the training
6. The employees are very glad to attend those training that will benefit to their current jobs

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AN EVALUATION ON THE EFFECTIVENSS OF A 9-MONTH INTENSIVE FULL-TIME PROGRAM FOR THE UNEMPLOYED

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Index: Evaluation, Effectiveness, Training Program for Unemployed

Abstract: In September 1998, the Vocational Training Council (VTC) and the Employees' Retraining Board (ERB) jointly conducted a 9-month intensive full-time course in various training institutions for the unemployed persons who were adults of 30 years of age or above and had attended Secondary 3 education. The aim of this course was to provide employable skills so as to enable them to be better equipped when they rejoined the work force in the service sector. The title of the course was Certificate of Skills Training (Service Industries) (CST (SI)).

This paper tries to evaluate the *effectiveness* and *usefulness* of the course in the following aspects:

a) meeting the needs of employers
b) providing suitable retraining to the unemployed
c) developing a life-long learning attitude towards the unemployed
d) giving career counseling

Finally, this paper will also highlight the role of the VTC in the retraining sector in Hong Kong.

INTRODUCTION

Owing to the rising unemployment in 1998, the Certificate of Skills Training (Service Industries) Course was introduced as one of the measures to tackle the problem. The course was designed to cater for 1,000 unemployed persons with the aim of provision of broad-based generic and transferable skills in order to assist them to re-enter the job market.

The curriculum of the course was thus focused on the generic and transferable skills immediately applicable to the work place. The course was conducted on modular basis at three different levels i.e. basic, intermediate and higher level. Students might take one module at basic level and another at intermediate/higher level provided he/she had sufficient achievement in the module concerned.

MEETING THE NEEDS OF EMPLOYERS

Before the course commenced in September 1998, the VTC conducted a postal survey together with a consultation meeting with major employers in Hong Kong in July 1998 with the aim to assess the real needs of employers. For the postal survey, 8 out of 13 trade associations completed and returned the questionnaires and indicated that the program was comprehensive enough to cover basic skills for a junior clerk in service industries. Although it might be argued the size of postal survey was small, it should be noted that the trade associations selected were very representative, reflecting over 200,000 employers' views. For the consultation meeting on 21 July 1998, 5 out of the 22 major companies had sent representatives to attend and their responses were favourable. Most of the others had already given either verbal or written favourable comments.

Based on the postal survey and the consultation meeting, the course curriculum would then be focussed on the (a) commercial and business knowledge; (b) language and communication skills; (c) computer knowledge; and (d) soft skills.

A survey on employers who took on the graduate retrainees had been conducted in August 1999. Among 53 employers interviewed, 89% of them opined that the retrainees' performance was "acceptable" or "satisfactory". The employers were very impressed by the working attitude and interpersonal skills of the graduate retrainees as 69% of them rated their working attitude as "good". Besides the employers considered that the skills level in areas like job skills, computer techniques and English language skills was average to good. Less than 20% of them opined that the retrainees needed to put more effort to upgrade their skills level. Judging from the result of the survey, it could be concluded that the course would provide responsible persons with good working attitude and up-to-standard job skills and language ability and the needs of employers were met.

PROVIDING SUITABLE RETRAINING TO THE UNEMPLOYED

As most retrainees were unemployed and displaced from various sectors for less than one year before taking the CST (SI) course, the retraining program should provide suitable skills training, knowledge and skills in bookkeeping, retailing, office practices and customer service required in the job market.

The success of the program depends on the probability of re-employment of the retrainees and the positive feedbacks from retrainees and employers. Data for analysis was gathered from mail and telephone surveys conducted in December 1999 and June 2000.

Table 1 below indicates that 89% of the retrainees held positive view and found the knowledge and skills they learnt from the course were "very useful" or "useful".

Knowledge & Skills learnt from the course	No. of graduates	Percentage
Very useful	248	46.0%
Useful	233	43.0%
Not useful	57	10.6%
No comment	2	0.4%
Total	540	100.0%

Table 1 Feedback of Graduates on the course[1]

According to the survey conducted in June 2000, 81% of the retrainees found the skills gained from the module of Computer Application were very useful. For placement rate, 75% of the retrainees from the CST (SI) course were seconded for employment. It was a higher rate when compared with 70% placement target for all retraining courses (ERB Annual Report 1999).

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[1] First Report on Employment of Graduates of CST (SI), ERB, December 1999.

From table 2 below, 363 graduates out of 540 still stayed with the first job after graduating from the course at the time of the survey in December 1999. The overall success rate, measured in terms of retention rates, was 67%.

Employment	No of graduates	Percentage
Employed and stayed with job	363	67%
Employed but changed job	44	8%
Subtotal	407	75%
Without work	133	25%
Total	540	100%

Table 2 No. of Graduates stayed with the job[1]

For those graduates without work (133), 94% (125) indicated that they intended to search for a job. Table 3 below shows such an intention.

Continue to search for a job	No. of graduates	Percentage
Yes	125	94%
No	8	6%
Total	133	100%

Table 3 Intention to find a job[1]

Judging from the encouraging placement rate (75%) and retention rate (67%), it could be concluded that the CST (SI) course was successful in providing suitable retraining to the unemployed in Hong Kong.

DEVELOPING THE LIFE-LONG LEARNING ATTITUDE

Mr. Tung Chee Hwa, the Chief Executive of the HKSAR Government, put forward the "life-long learning" concept at his 1998 Policy Address. One of the objectives of the CST (SI) course was to satisfy the above mission i.e. to develop the life-long learning attitude so that the retrainees could attain the new skills required for our modern society.

Previously, retrainees did not consider the concept of "life-long learning" significant. Maybe "Fond memories of school learning are rare and in most people's minds knowledge acquisition seems to stop when they leave school. It is no surprise that life-long learning is usually not part of our mindset." (Prashing, 1998).

Now after studying the course, the learning attitude of the retrainees was changed. They believed that only by keeping their continued learning attitude right they could take up new skills or develop their existing skills needed in this competitive job market.

A Certificate in Vocational Studies evening course started last year at the IVE (LWL Campus) which allowed the graduate retrainees of the CST (SI) course to enroll in its second year. This was a further training opportunity arranged for those whose knowledge and working skills needed improvement. It was well perceived by the retrainees that the course was to improve their vocational skills and to lead them to attain higher qualifications, while working in the daytime.

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[1] First Report on Employment of Graduates of CST (SI), ERB, December 1999.

In order not to have the unpleasant experience of losing job, the life-long learning was definitely in the retrainees' mind now as Mr. Tung's 1999 Policy Address pointed out that everyone should embrace life-long learning to face a knowledge-based economy in the information age (Policy Address 1999).

GIVING CAREER COUNSELING

At the start of the course, each of the five IVE campuses appointed at least one placement officer to provide career counseling to the retrainees. These placement officers were all involved in teaching duties throughout the course so that they could develop rapport with the retrainees and get to know them better. When the program was completed in September 1999, the placement officers stayed centrally in the CST (SI) Placement Office in Kwun Tong campus and continued to offer post-course placement and counseling services for the graduate retrainees for a further period of nine months. In order to enhance the retrainees' employability and encourage them to use the career counseling service after their graduation, the placement officers designed, promoted and conducted Powerpoint courses, DacEasy (for accounting) courses, Interview Skills seminars, Labour Ordinance seminars and the like. This proved to be successful as 182 (headcount) graduates attended the above activities in the Kwun Tong Campus. Moreover, all these efforts resulted that at least 30% of those unemployed graduates visited the CST (SI) Placement Office and used its service[2] each month. The main duties of the placement officers were described as follows:

1. *Studying the individuals and providing encouragement* - The placement officers had been helping retrainees to change goals and directions to meet the challenges of changes in the future workplace.
2. *Providing advice on resume writing and interviewing techniques* – Apart from assisting the retrainees to produce highly readable and presentable resumes, the placement officers had been arranging and conducting mock interviews with each retrainee. Accordingly, 60% of the graduate retrainees successfully secured a job within the first three interviews[3].
3. *Surveying occupations and matching them with the individuals* - The placement officers had been studying the nature of the job vacancies through telephone conversation with the employers and selecting potential candidates for job interviews. Some employers told the placement officers that the job matching service in the VTC was more efficient and effective as the referrals of relevant candidates were done within a very short period of time.
4. *Providing on–going support* - For every three months, the placement officers had to telephone all retrainees to conduct an employment survey. The placement officers gathered information from both employed and unemployed retrainees and developed further action plans to assist them.

All the above helped the retrainees (i) feel valued and appreciated, (ii) change their perceptions, (iii) restore confidence, and (iv) show more initiative and effort in job searching. Their change in attitude and the rise in morale had resulted in VTC achieving a placement rate of 80% as at 31 May 2000. Of the 506 retrainees who graduated in the program, a total of 404 had been placed into employment. Therefore it could be said that the placement officers had been playing a very supportive role and monitoring the retrainees' job search process with great success.

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[2] CST (SI) Placement Office Monthly Report.

[3] CST(SI) Placement Record

CONCLUSION

Since the CST(SI) course was a pilot course of unusual scale in terms of the number of retrainees enrolled and its long duration, it was obvious that the course would encounter quite a number of comments. The comments, which the writers believed to be acute, were listed as follows:

1. *On course content.*

   Although the course was in general regarded as useful, contents in different subject areas were criticized for being overlapping. However, this problem was resolved as various subject panel meetings across different campuses were held throughout the academic term.

2. *On course delivery.*

   It turned out that a lot of retrainees were overqualified and thus it caused difficulties in course delivery because of the great diversities in education background. As an attempt to handling this problem, most lecturers worked very hard in preparing supplementary training materials for those overqualified students in order to meet their genuine needs.

3. *On publicity.*

   It was complained by some applicants that they missed the advertisements on the course. The application period should be lengthened and more widely publicized so that every one who was interested in the course could apply on time.

4. *On course duration.*

   The 9-month full-time course was often regarded as too long. This was a reason why quite a number of retrainees dropped out from the course for placement purpose. One suggestion put forward was to set up a part-time evening modular program.

It had to be emphasized here again that this was a pilot course for ERB, and thus ERB had to critically evaluate the costs and benefits of the course before it could make a conclusion to re-run the course again or not. Based on its recommendation in the review report conducted by the ERB in October 1999, it was suggested to restructure the 9-month full-time course in the following two ways:

1. A modified mode of delivery i.e. a 2 to 3 month intensive full-time training program plus part-time follow-up modules to meet the objectives of the course.
2. A genuine modular structure i.e. upon completion of each module, a modular certificate would be awarded. Accumulation of a required number of modular certificates would lead to certain vocational qualification.

Although the course was short-lived i.e. lasting for only a year and subject to the above comments, the 9-month intensive full-time CST (SI) program was still considered effective in providing valuable training opportunities to the unemployed and in enhancing their employability and confidence in the job market.

The roles that the VTC had played were highlighted as follows:

1. *As a course provider.*

   The provision of retraining programs in the IVE campuses was popular with retrainees as the facilities such as mass lecture hall, self-access learning centre, library, students' canteen and computer room etc. were abundant.

2. *As an administrator.*

   The VTC had developed a functional mechanism such as the holding of numerous subject panel meetings, the conducting of the train-the-trainers workshops and the designing of a standardized teaching package for course coordinators in delivering their lectures.

3. *As an accrediting body.*

The 9-month CST (SI) course was accredited by the VTC. It was hoped that the VTC would establish a framework for vocational qualification, which would provide retrainees with official recognition of vocational training. This could be expanded to the accreditation of all kinds of retraining programs whether they were in full-time or part-time manner, in day-time or part-time evening mode, and on modular or stage-based basis.

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AN EXAMINATION OF THE CONCEPT OF PROVIDING LEADERSHIP DEVELOPMENT FOR ALL STUDENTS AS AN INTEGRAL PART OF CLASSROOM INSTRUCTION

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Index: Leadership Skill Development, Employability, Instruction Planning

Abstract: The concept of having all career/vocational/technical students develop leadership skills in addition to their other salable skills is recognized by both educators and employers. Total student development is necessary for all students to ensure successful roles in society, and to enter the labor market. Incorporating leadership skills in the instruction, improves the quality and relevance of the instruction, develops student leadership, enhances citizenship responsibilities, overcomes sex and race discrimination and stereotyping, and benefits all students including special populations and minorities. Occupational skills need to be enhanced with skills that enable the student to communicate with employers and do well in the workplace.

PRESENTATION

The concept of having all career/vocational/technical students develop leadership skills in addition to their other salable skills is endorsed by federal and State guidelines for conducting programs. The Policy Statement (National Coordinating Council, 1998), of the United States Department of Education, For Vocational Student Organizations, includes, ". . . . total student development as being necessary for all vocational-technical education students to assume successful roles in society, and to enter the labor market". The same statement continues, ". . . . to improve the quality and relevance and instruction, develop student leadership, enhance citizenship responsibilities, overcome sex and race discrimination and stereotyping, and serve students of special populations, especially with respect to efforts to increase minority participation in these organizations".

Teachers are urged to incorporate leadership development into their instruction based on the following rationale:

a) Occupational skills need to be enhanced with skills that enable the student to communicate with employers and do well in the workplace.

b) School activities tend to be minimized for students studying business and vocational-technical education due to the nature of the program and their involvement with field-based experiences/part-time supervised employment. Missing participation in activities such as student government, clubs, and other extra curricula activities, is compensated for by learning leadership skills in class/shop-laboratory experiences.

c) Values and qualities acquired through leadership development help the student develop a stronger self-image and enable students to get along better with others in their personal and workplace life.

The focus of teachers is to have students learn occupational skills first, and then if time is available, have students learn some leadership. Usually there is never any time made available for this in the instructional program. The federal government's (Office of Education's) approach to this concept is to encourage educators to have leadership development integrated into the instructional program, and the burden for doing this falls to teachers and instructional leaders. It is appropriate when a school has a Future Business Leaders of America (FBLA) (1995), Vocational Industrial Clubs of America (VICA) (1996), An Association of Marketing Students (DECA) (1997), and other organizations, but the point that is missed is that every class and every student are supposed to have these leadership experiences, according to good education practice. When each class has a career and technical student organization (ctso) or other classroom-related organization, there are many sets of officers, agendas, programs, etc. that actually expose all students to leadership skills. These activities usually take place in class once a week for a twenty to thirty minute meeting and program. Many teachers who participate in leadership instruction, arrange for this to take place during school time and class time as an integral part of the instruction. When programs are not obligated to a central or government agency, they should recognize the need for incorporating leadership skills into the existing instructional program.

In starting out to incorporate leadership skill development in the instructional program, the teacher could use a generic approach. Instead of being concerned about joining a national organization, a generic organization could be organized right in the class or shop/laboratory. Students studying Business Law or Welding or Electronics could be in the Business Law Club or Welding Club or Electronics Club, and they could elect officers, plan short weekly meetings in class, plan an agenda, and have programs that involve local employers or advisory committee members as speakers, or plan field trips. As part of this new activity the class could go on a field-trip to visit another class of the same subject at a nearby school. The two teachers would plan a program for that period which could include exchanging information about what is being studied, equipment being used, and if time allows, having a guest speaker. Students would meet each other and see that the same subject matter is being studied elsewhere. The realization that there are many students of the same backgrounds and/or interests, is a positive factor in the student's leadership development. Students are also able to netwok with each other and with employers.

As time moves on, and the generic organization is established with officers and weekly meetings in class, the teacher can then introduce the idea of national affiliation, regional and State events and conferences, and national literature and magazines. This slow approach works very well with teachers and/or students who may be overwhelmed with starting out with national affiliation from the very beginning.

It should be noted that there are other organizations that have materials on leadership skills that could also be utilized in the classroom. Teachers could use materials from business and industry, journals, and other publications that have articles concerning leadership. This information can be used in a variety of ways in the classroom. Examples of organizations that have information and materials on leadership include: Junior Achievement (1996), Toastmasters (1992), DeMolay International (1996), International Order Of The Rainbow For Girls (1997), 4-H School Enrichment Program (1997), Kiwanis, Rotary, and many other groups interested in the development of young people. Special recognition goes to the Junior Achievement Program that assigns regular visitors/speakers/advisors from business/industry to visit classrooms on a routine basis. No other organization or student organization has such an arrangement on a wide scale.

Although learning and developing occupational skills in school is primary, it is another thing to be able to communicate and get along with employers, customers, co-workers, fellow students, and teachers. Leadership skills enable a student to "sell" their occupational skills to employers and use them in the workplace. Without the leadership skills, many students never get to the workplace or are unable to remain in the workplace. The National Coordinating Council For Vocational Student Organizations (1990) points out the importance of leadership skills for every student studying to prepare for careers in business, industry, and service occupations.

In schools that have formal memberships in the recognized ctso's, every student in the classroom/shop should still be included in the leadership skill development instruction, even if they are not a dues paying member.

Research (Bell, 1989) (Lankard, 1996) has shown that students who had been involved with student organizations were:

- more likely to be involved in community affairs and organizations, school organizations, church groups, etc.
- able to gain professional experience and establish contacts with employers
- gain more poise, confidence, and strengthen personality traits.

The information that is to be taught according to Saulness (1990) is:

Personal Leadership
Group Dynamics
Communication
Officer Responsibilities
Project Planning.

Also included is Planning A Leadership Retreat, for students and advisors. These leadership skills and activities are incorporated into the marketing instruction program.

In the VICA Professional Development Program (1995), master competency lists and the instructional content are included for students in the following broad categories:

Work Force Awareness
Self-Improvement
Civic, Social and Business Awareness
Work Force Basics
Professional Strategies
Career Planning
Post-Competencies.

These competencies are to be studied in addition to the specific occupational area of the student.

The Marketing Education (MarkEd) Resource Center (1993) developed a learning activity package, *Leadership in Business*, to be used by students and instructors in examining leadership and its benefits. Included in this packet are:

Define Leadership
Characteristics of Each Type of Authority

Benefits of the Use of Leadership
There Are Different Leadership Styles and Traits
Three Distinct Categories of Leadership Style
Prevalent Leadership Theories
Six Important Leadership Techniques.

This package also examines increasing productivity through leadership, and then moves into leadership in business.

An example of a comprehensive textbook for secondary school students is by Ricketts (1996), Leadership - Personal Development & Career Success. This book is endorsed for use by students of agriculture, and includes the following:

Understanding Leadership
Communication and Speaking Before a Group
Leading Individuals and Groups
Conceptual (Thinking) Skills
Personal Development
Transition to Work Skills.

The instructor interested in incorporating leadership development in class could use an experience-based approach, contextual learning, for students. In explaining how students will participate in organizing and conducting their class-related organization, the following steps are to be included:

Electing Officers
Training/Preparing Officers
Defining Officer Responsibilities
Learning Parliamentary Procedure
Planning and Conducting Activities Related to the Instruction.

As the instructor implements leadership skill development, the emphasis is to have students gain insight into the kind of personality and leadership skills that are most appropriate to the field being studied. Students are able to identify the soft skills that are necessary in the workplace. In some occupations the emphasis may be working with customers or clients, while in other fields it may be working with supervisors or co-workers. Another concern is to have students identify whether productivity or quality control are key components of their chosen field. Being able to determine the expectations of management for personnel performance, and seeing how workers react is valuable to students. As students are more aware of leadership skills in the workplace, and how they are implemented, they will be more effective workers. Communicating more effectively, exercising critical thinking, setting goals, reflecting positive values, and getting along with others, will help students to be more successful in their personal and professional lives.

Between the numerous leadership materials from business and industry, and materials from professional groups, there is an ample supply of literature to be used by instructors and students. Encouraging more teachers to incorporate leadership skill development as instruction related to the specific career area is both a challenge and a need. Facilitating the student's ability to function in society and in the workplace serves a common interest.

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CONTINGENCY THEORY IS OF LITTLE VALUE IN HELPING LEADERS OR POTENTIAL LEADERS TO PERFORM SUCCESSFULLY

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Keywords: Leaders; Contingency theory; Maturity of Subordinates; Task Motivated; Relationship Motivated; Taxonomy of Decision Process

Abstract: Contingency Theory does not provide a recipe to problems, but some argue that it could provide an action list. I am going to discuss the Contingency Theory of leadership in the light of whether it enhances performance. Contingency Theory is one that if we know which particular leadership style in a particular situation is more appropriate, the leader will adjust his behaviour to the situation in order to enhance performance, subordinate's job satisfaction, etc. The beginning section of the essay will be devoted to a literature review and a discussion on the theoretical framework on the three approaches of the Contingent Theory. Later cases indicate how Contingency Theory was applied, or was ostensibly applied to the administration of an academic section in a university in Hong Kong. The essay concludes by identifying practices which might enhance performance of contingent leaders.

INTRODUCTION

Contingency Theory does not provide a recipe for solving problems, but some argue that it could provide an action list. I am going to discuss the Contingency Theory of leadership in the light of whether it enhances performance. The beginning section of the essay will be devoted to a literature review and a discussion on the theoretical framework on the three approaches of Contingency Theory. Later cases indicate how Contingency Theory was applied, or was ostensibly applied to the administration of a university in Hong Kong. The essay concludes by identifying practices which might enhance performance of contingent leaders.

THEORETICAL FRAMEWORK

Definition of Leadership

Although Bryman (1986) refuses to list in his book a wide range of definitions for leadership, he nevertheless gives one after his literature review. Surprisingly enough, the definitions from different authors seem to have converged to one definition from Stogdill (1950), which is quoted below as my starting point for subsequent discussion:

> *Leadership may be considered as the process of influencing the activities of an organized group in its efforts toward goal setting and goal achievement.*

Contingency Theory

Different leadership styles are appropriate to different problematic situations. Bryman (1986:158) concludes from the approaches of Fiedler, Hersey-Blanchard and Vroom-Yetton, that Contingency Theory is one that if we know which particular leadership style in a particular situation is more appropriate, the leader will adjust his behaviour to the situation in order to enhance performance, subordinate job satisfaction, etc.

Firstly, I would like to quote Hersey and Blanchard's model as follows, basing on Beare et al's (1989:104) interpretation:

> *Hersey and Blanchard (1982) proposed in their situational theory that leadership behaviour should be varied according to the maturity of subordinates or followers. The situation in this theory is thus defined by maturity, with two dimensions proposed: professional maturity and psychological maturity. There are also two dimensions of leadership behaviour: task behaviour, in which the leader emphasises or specifies the tasks; and relationship behaviour, in which the leader invests time in developing good interpersonal relationships with and among the group. The theory proposes four general types of leadership behaviour, each of which is appropriate to a particular level of maturity. With increasing maturity, the leader should move through styles designed 'telling' (high task, low relationship); 'selling' (high task, high relationship); 'participating' (low task, high relationship); and 'delegating' (low task, low relationship).*

Secondly, I would like to quote Fiedler's theory from Beare et al's (1989:105) again as follows:

> *Fiedler found that task-motivated leaders (those whose primary, driving motivation is to ensure that the task at hand is addressed) tend to be best suited to situations which are either highly favourable or highly unfavourable according to the extent to which tasks are structured, where there are good leader-member relations and when the leader has position power. Relationship-motivated leaders (those whose primary, driving motivation is to ensure that there are good relations with and among members of the work group) are best suited to situations which are moderately favourable on these dimensions. The Fiedler theory has implications for matching leaders to situations and for encouraging leaders to modify their situation where possible to ensure consistency with style.*

The former identifies both directive and supportive behaviour in a leader, which can be modified according to the level of development, experience and commitment of the subordinate. Intuitively it is credible but it relies on leaders being knowledgeable about the development of their employees and sophisticated in switching behaviour when appropriate.

The latter theory has shown that when the situation is particularly favourable or unfavourable to the leader a task-orientated leader is more effective. When the situation is neither particularly favourable nor unfavourable a people-orientated leader is more effective.

Further, I would quote Vroom-Yetton contingency model which places emphasis on participativeness from Bryman (1986). The theory is normative and it sets out standards and rules for others to follow, it is now stated thus:

> *The aim of the approach is to enable the leader to enhance both the quality of the decisions that he or she makes and also their acceptability to subordinates. A good quality means a good performance while a high acceptance by the subordinates means a good implementation of decision and the guaranteeing of a good outcome. Bryman (1986: 151) sets out Vroom's 'Taxonomy of decision processes' which lists out the Autocratic AI and AII, the Consultative CI and CII, and the Group Decision GII. These five approaches to leadership are on a continuum of participativeness with AI and GII at the extremes. Vroom's model further proposes seven 'rules' which allow the leader to eliminate step-by-step those styles which are not feasible. Bryman suggests that the idea is for the leader to follow through each rule in order to discover appropriate styles in view of the circumstances.*

> *According to the Vroom-Yetton model, a leader should be both autocratic and participative, varying his style according to various situational factors.*

Vroom's approach differs from Fiedler's in respect of how the matching should be achieved. Fiedler's emphasis is upon changing the situation; Vroom's is on making the leader more aware of the implications of the situation for his behaviour.

The Managerial Grid Schema is quoted by Bryman (1986:75). It is not directly related to Contingency Theory but is part of the leadership style theory. He quotes thus:

> *The infrastructure to their approach is a contrast between two approaches to the managerial role: concern for production and concern for people. Both concerns are essential ingredients of effective management.*

Imagine a square grid with five sets of co-ordinates, with x-and y- axes in a scale of 9. (1,1) is called impoverished management with conflict likely to be rife. (1,9) is country club management and people are not pushed to produce. (9,1) is task management, where management sees its job primarily in terms of controlling and directing subordinates and planning their work. (5,5) is a middle-of-the-road position, with emphasis on both dimensions. (9,9) is called team management, which is a participative system, since people responsible for the production are also supposed to be involved in work planning and execution.

According to the research results found, managers often oscillate between (9,1) and (1,9) styles: the former in response to a need to enhance output, the latter when interpersonal relationships suffer.

It would have been a reason for the Contingent Managers to oscillate in styles for the sake of the two dimensions of concern.

PERCEIVED WEAKNESSES OF THE ABOVE MODELS

A number of criticisms and concerns have been identified by critics. Hanson (1996:172) has summarised the weaknesses for the models as follows:

1. The contingency variables are complex and difficult to assess. It is often difficult to assess the quantity of the leader member relationship, degree of structure of the task and the position power a leader has;
2. The model gives little attention to the characteristics of the subordinates.
3. No attention is given to varying technical competencies of the leader or the subordinates. The model assumes that both the leader and subordinates have adequate technical competence.
4. The correlations Fiedler presents in defence of the model are often low and statistically non-significant.
5. The Least Preferred Co-worker (LPC) instrument is open to question. The logic underlying the LPC is not well understood and studies have shown that the respondent's LPC scores are not stable.
6. There are other situational variables that can be important in determining the favourableness of the leadership situation; for example, stress, linguistic or cultural heterogeneity, organizational climate, and level of training.
7. It is doubtful whether a leader can switch leadership styles in the face of different types of problematic situations.

8. It is not understood what causes some people to become task-motivated and others relations-motivated.

The weaknesses pointed out in the above arise from the quantitative aspect of the Contingency Theory. It is paradoxical to note that the wider the application a theory is, the greater the uncertainty it will produce. The philosophical phenomenon that even our most successful theories cannot be said to be confirmed or verified, only corroborated or as yet unfalsified, still holds true. As leadership styles need adjusting to the changing situations, the theory is useful in certain situations, but not in all. This is illustrated by the following examples.

WHY IS CONTINGENCY THEORY OF LITTLE VALUE? - EXAMPLES

It is obvious that most of the leaders seemed to have been masters at selecting, synthesizing, and articulating an appropriate vision of the future. It is a common quality of leaders down through the ages. For example, a contemporary biographer of Napoleon, Louis Madelin, describes him:

> *He would deal with three or four alternatives at the same time and endeavour to conjure up every possible eventuality- preferably the worst. This foresight, the fruit of meditation, generally enabled him to be ready for any setback; nothing ever took him by surprise... His vision, as I have said, was capable of both breadth and depth. Perhaps the most astonishing characteristic of his intellect was the combination of idealism and realism which enabled him to face the most exalted visions at the same time as the most insignificant realities. And, indeed, he was in a sense of visionary, a dreamer of dreams.*

Napoleon was able to imagine the full spectrum of alternatives, from the best to the worst. No wonder nothing could surprise him.

The eminent journalist Dr. Cha Liang-Rong (Mingpao, 2000:12) has spoken about the changing of leadership should situation changes. In a forum delivered to "Journalism Revamping and Management Conference" at the University of Jia Jiang in China, he insisted that:

> *The Communist Party of China sets fundamental policy for the well being of the people. Liberty of expression (including the press) also treats peoples' interest as the top priority, as such the Press must obey the leadership of the Communist Party. However, it might be contingent on the situations. For example, should idiosyncratic policies like the " Great Leap Forward", or the "Cultural Revolution" (human disasters) be started again by the Communist Party, journalists and the press should readjust their attitude and direction to defend people's interest and to reflect the opposite views of the people to the Party Leader rather than to follow blindly.*

Dr. Cha had been the No. 1 target denonunced by the Communist Party during the 60s in China. He changed his style of leadership since China dropped the hostile attitude after the Open Door Policy. The above quotation shows how he applied the Contingency Theory to cope with different political situations.

I would like to quote application examples of the Contingency Theory in a university in Hong Kong. Within the university there is a College providing education and training to sub-degree programmes with 36% of the overall university student numbers. The Principal is the leader. There has been a change in style of leadership initiated by two consecutive Principals, two examples illustrate how Contingency Theory has been or should have been applied:

The Staff Performance Appraisal

The teaching feedback for staff performance has been a controversy. Imrie (1995:26) writes that the concepts of assessment, appraisal and evaluation as a form of staff performance need to be clearly understood by the staff.

Indeed in the College, the use of staff appraisal has never been a culture. Any attempt to introduce this idea is to be interpreted as offensive and intrusive into the individual's territory and dignity. In one occasion there was heated disgruntlement expressed by the majority of staff in a staff meeting provoked by a tentative suggestion for using student feedback to appraise staff. The rebellious staff showed their dissatisfaction toward the idea of appraising performance. Some even took an analogy as to express that a defendant is presumed guilty before the trial and which is contrary to common law.

In Hersey and Blanchard's terms, the College staff has not reached the degree of maturity both psychologically and professionally. Any leader wanting to instigate a new concept without surveying the degree of acceptability of his subordinates, in Vroom's terms, is doomed to fail. The fruit is just not ripe and the former Principal has not been forceful enough to push forward the performance appraisal.

However, by a swift turnabout, instead the Principal has emphasised the importance of portfolio approach for staff performance instead of the judgmental appraisal system. Contingency Theory is adopted here, the emphasis on change on the use of appraisal tools is something that should be avoided. According to Hersey and Blanchard's theory, a leader needs to gauge the maturity of his or her subordinates before deciding which pattern of leadership behaviour is required. Therefore as the level of maturity changes, a different leadership style is required.

The latter Principal tends to be a relationship-motivated leader. When he first took up the Principalship he put the appraisal issue aside. He set up work groups to monitor this problem. At that time, university culture favoured assessment of performance. The personnel office has made it a rule that all staff in the university would have to submit their appraisal based on a performance plan as agreed beforehand with an appraisor. When the Principal saw the chance, he made it mandatory to include the student feedback appraisal as part of the performance. Surprisingly, the resistance to the inclusion has been less pronounced. Therefore, as culture further develops, staff become more matured in relation to appraisal and accept the system with which they previously sought to resist. So this suggests that as situation changes, it requires a different leadership style.

A scale is developed to rate the maturity level of each subordinate and the leader. According to Hersey and Blanchard, leadership styles may be negotiated by leader and subordinate. Bryman (1986:150) quotes Graelf and Yukl as suggesting that the main contribution of the Situational Leadership is that leaders need to be flexible in their behaviour.

Shortening of Programme Duration

All along, the College has been running programmes which are of a 3-year duration. Although the other university has been running some programmes which are of a year shorter, nevertheless, such programmes only form a minority and as long as they remain in a joint admission system, there are no comparative advantages when recruiting students.

However, last year that university finally decided to withdraw from the joint admission scheme, to make way for upgrading to closer to a university status and to save money, perhaps. A big change seems approaching.

The latter Principal has set goals for the College. He has seen the impending change in the higher vocational studies in Hong Kong. Like in many previous occasions, he set up task forces, work groups and sub-committees to combat problems. A task force has been set up to address the question of whether to keep the same duration for the programmes in the College. SWOT exercises have been conducted to analyse the programmes, and the result is that the programmes are under no great threat. Since the latter Principal is a relationship-motivated leader, if there is no consensus for change, then he would see it to be illogical not to keep the status quo, especially when the shortening of programme duration may mean a reduction of resources from the Government.

Apart from the withdrawal of a partner university from the joint admission organization, the Government has recently published a report by the Education Commission advocating the establishment of a community college which may be of a two-year duration study. In order to be the first community college in Hong Kong to be set up by this university, the College received a mandate to shorten the programmes from 3-year to 2-year duration, making the College fitting into the Government's requirement, so an immediate change is necessary.

The change to a shorter duration meant a lot of hard work for the staff team. The College staff have been extremely busy in trying to adapt to the new academic system implemented by the university. Fortunately they have just got to the shore but then the mandate to reduce length may mean a complete revamp of the document and some of the previous hard work might have gone down the drain. Besides, the quality for squeezing a 3-year programme into a 2-year duration may be sacrificed. Had this need been identified much earlier on and earlier start instigated, such productivity loss might have been avoided.

Too much concern for the people might jeopardize performance. If a leader changes the style of leadership early enough he may still be able to take the opportunity to keep the same quality of performance no matter how hard a relationship-motivated leader tries to raise the morale, the effectiveness is still contingent on the future changes. Thus Contingency Theory has little value.

CONCLUSION

Contingency Theory is not to be seen as a specific guideline. It is a useful metaphor to help leaders to think and to reflect. The theory can be used to reflect on their usefulness. Contingency emphases congruencies and matching of the internal system with external environments.

Leaders tend to have good ideas but they are swamped by external events and cannot always immediately implement them, resulting in a blocking of these views. For example, positioning the enterprise is an external event. In order to produce the best result, therefore Contingency Theory in leadership style can be reinforced by the theory in organizational structure. Some useful practices might be used for leaders to position their enterprises:

1. Reactive. With this approach, the organization waits for changes and reacts - after realisation;
2. Change the internal environment. Instead of waiting for change to happen to them, leaders can develop effective forecasting procedures to anticipate change and then pro-act rather than react;
3. Change the external environment. The approach needs that the organization anticipating change acts upon the environment itself to make the change congenial to its requirements; and
4. Establish a new linkage between the external and internal environments. Using this mechanism, an organization anticipating change will attempt to establish a new relationship between its internal environments and the anticipated external environments.

As a reflective practitioner, Schon (1983:300) writes, " I am presumed to know, but I am not the only one in the situation to have relevant and important knowledge. My uncertainties may be a source of learning for me and for them". There is no need to put on the professional facade to pretend to know everything, the uncertainties could be a title for the next round of new knowledge.

Though Contingent Theory is unable to resolve these uncertainties, I find consolation that Vroom's Model provides a useful step by step approach in determining by elimination those styles which are not feasible. From this approach, a decision-tree structure emerges through which the leader follows the implications of each of the seven rules for his style of leadership. This approach reduces the arbitrary nature of the system that is inherent in Contingent Theory and is therefore to be favoured.

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CONTINUING PROFESSIONAL DEVELOPMENT TOWARDS EMPLOYEE EMPOWERMENT IN MANPOWER TRAINING: A NEW DOMAIN OF ORGANISATIONAL STRATEGY

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Index: Employee, Empowerment, Culture, Training

Abstract: In response to the growing complexity and dynamics of global environment, the key to success is to encourage employee to be responsible for the success or failure of the enterprise. The process for securing that employee involvement and creating change is employee empowerment. This paper provides an overview of the employee empowerment considerations pressing upon the managers' attitude and proposes an overall empowerment process management model and training curriculum in effective quality service delivery. It also reports on a case study investigating the current and potential existence, implementation and levels of training in empowering management styles in ten international property management groups in Hong Kong.

INTRODUCTION

In the realm of organisational strategy, employee empowerment has become a new topic that attracts research academics and practitioners. An empowerment approach encourages those employees to have more discretion and autonomy in organizing their own work. It also involves quality service delivery system in which employees can face the customers "free of rulebooks" and are encouraged to do whatever is necessary to satisfy them. Recently, many researchers point out that organisational strategies towards empowerment, which was often omitted in earlier researches, is a critical factor in determining the success of customer satisfaction. This paper takes its starting point from a general dis-satisfaction with current perspectives on empowerment, aiming to highlight some related issues and implications that may shape professional management development to empowerment in the new millennium.

LITERATURE REVIEW

While struggling with the changing climate in technological communication with access to the internet and electronic services, many organisations have brought in external experts who advise them on quality and restructuring. Empowerment is the process to give staff real authority in their work to achieve continuous improvement and job satisfaction in an organisation's performance for better quality products and customer service in order to remain competitive (Kinlaw, 1995). Empowerment encourages and allows individuals to take personal responsibility for quick response time to consumer needs and complaints with more warmth and enthusiasm. In recent years, employee empowerment has become a separate discipline that has attracted widespread discussion to achieve organisation's goals.

As to the individual perspective of empowerment, Spreitzer (1992) identifies four characteristics most empowered employees have in common: (a) sense of self-determination to choose how to do the work, (b) sense of competence to perform the work well, (c) sense of meaning to care about what are doing and finally, (d) sense of impact to have influence on the larger environment. Empowerment, then, is a mind-set that employees have an overall feeling of psychological empowerment about their role in the organisation. Menon (1995) indicates that greater job autonomy, increasing meaningfulness of the job, mentoring behaviours of the immediate supervisors and job satisfaction may increase the organisational commitment of the employees and increase their psychological empowerment in the workplace. It is observed that employee empowerment strongly associates with the nature of the job and the leadership commitment in developing an empowered workforce.

Regarding the organisational perspective of empowerment, some studies focus on how the sharing of power within an organisation is affected by the structure and culture of the organisation. The overall theme of this perspective is the relocation of power from the upper levels of the organisational hierarchy to the lower levels of rank-and-file workers Responsibility for the organisation success is shared by all members. An empowered workplace should be structured to encourage front-line employees to exercise initiative and imagination in solving problems, improving processes and meeting customer needs (Potterfield, 1999). Potterfield also addresses the need to create enthusiasm and commitment by development of organisational value and visions that are congruent with workers' values and visions. Furthermore, management job from this perspective is to create a culture of participation by providing a compelling mission, a structure that emphasizes flexibility and autonomy, rewards for participation and a lack of punishment of risk taking as well as ongoing involvement programmes (Honold, 1997).

EMPOWERMENT AND TOTAL QUALITY MANAGEMENT

The term empowerment is the process of giving staff greater authority or power to decentralize decision making without reference to higher levels and for which they are being held accountable whereby the managers give more discretion and autonomy to customer contact staff (Brymer, 1991). Empowerment programmes can transform a stagnant organisation into a vital one by creating a shared purpose among employees, encouraging greater collaboration and most importantly, delivering enhanced value to customers. It has been found that organisations with a commitment to employee involvement and empowerment also have a commitment to total quality (Lawler, Mohrman & Ledford, 1992). This concept stems from the current international stgrategy towards Total Quality Management (TQM). It is often based on a desire to gain competitive advantage, increase productivity and improve customer relationships through quality assurance issues. As to the origins of empowerment, empowered groups have often resulted from organizational change such as downsizing or by adopting a flatter structure. Therefore, employees often perceive empowerment as receiving additional tasks (Menon, 1995). Effecting such organizational change is probably the hardest aspect of establishing TQM. However, effective empowerment can bring most organisations many successes and achievements as employees learn about the connection among their decisions, actions and customer value. In addition, they become self-directed decision makers aligned with the shared purpose. In order to stimulate employees to become involved and empowered in business improvement programs, employees at all levels need to be given power, knowledge, information, and rewards that are relevant to business performance (Mohrman, Lawler & Ledford, 1996).

THE EMPOWERMENT PROCESS

The key to achieving empowerment for improved performance is for everyone in an organisation to have a clear understanding of what they are trying to achieve by empowerment and what they must do to achieve their purposes. The Empowerment Process Management Model (Figure 1) identifies the following six key steps in the planning, initiating and evaluating of an organisation's initiative to extend and strengthen empowerment. These steps make a closed loop process whose output is continuous improvement (Kinlaw, 1995).

- *Define and communicate* the meaning of empowerment to every member of the organization.
- *Set goals and strategies* that become the organizing framework for staff at every organizational level as they undertake their own efforts to extend and strengthen empowerment.
- *Train* staff to fulfill their new roles and perform their functions in ways that are consistent with the organisation's goals for leading an empowered workforce.
- *Adjust the organization's structure* so that it demands a flatter format, creates greater autonomy and freedom to act.
- *Adjust the organization's systems* (like planning, rewarding, promoting, recognising, training, and hiring) to support the empowerment of staff.
- *Evaluate and improve* the process of empowerment by measuring improvement and the perceptions of the organization's members.

These six elements in the model are linked together within a single rectangle to emphasize their relatedness. Around this large rectangle is a series of smaller rectangles which identify sources of critical inputs. The empowerment process can only be undertaken successfully if the following kinds of information and knowledge are well understood:

- *meaning of empowerment*;
- *payoffs* expected;
- *targets for empowerment* which provide a set of alternatives that everyone can use in targeting specific opportunities to empower themselves and others;
- *strategies for empowerment* which provide multiple alternatives for reaching the targets which individuals and organizations identify;
- how *controls for empowerment* differ from traditional controls and how these controls can be developed; and
- new *roles and functions* in which managers and other members of the organization must become competent for their performance to be compatible with the meaning and purposes of empowerment.

To minimize mistakes during the process and progress of empowerment, the necessary conditions must be created at the outset. These include the commitment from managers who are the key players in an empowered workplace, full involvement of employees / customers / suppliers and open communications. As empowerment does not exist in some universal form that can be applied to every kind of organisation, each organisation must test and learn as it goes. More importantly, staff must be well equipped with the kind of training required for empowerment such as high level analytical and problem-solving skills. This means that staff must be able to depend on their own good judgment and apply that judgment to more and more aspects of their work.

To sum up, the forces of global markets, escalating customer expectations, emerging technologies, shrinking natural resources and the new entrepreneurial spirit have altogether called for the need to reshape organisations and change the way of operation. It is believed that greater employee empowerment is that breakthrough opportunity for all businesses to leverage in improving their sustainable performance.

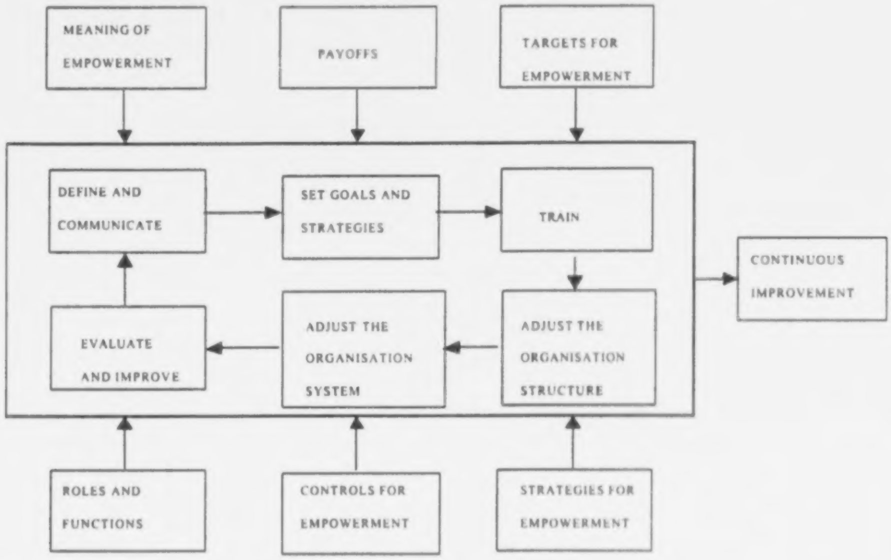
MEANING OF EMPOWERMENT
PAYOFFS
TARGETS FOR EMPOWERMENT
DEFINE AND COMMUNICATE
SET GOALS AND STRATEGIES
TRAIN
CONTINUOUS IMPROVEMENT
EVALUATE AND IMPROVE
ADJUST THE ORGANISATION SYSTEM
ADJUST THE ORGANISATION STRUCTURE
ROLES AND FUNCTIONS
CONTROLS FOR EMPOWERMENT
STRATEGIES FOR EMPOWERMENT

FIGURE 1: EMPOWERMENT PROCESS MANAGEMENT MODEL

Source :The Practice of Empowerment - Making the most of Human Competence, Kinlaw D. C.(1995)

ISSUES AND IMPLICATIONS

This case study project is ongoing and at this stage only an initial survey has been concluded. This involved informal interviews with company employees at different levels, including senior management, in five Hong Kong companies and five multinational corporations. The objectives of the pilot study were to gain a better understanding of the thinking and operation of the selected companies. The interviews comprised a faxed pre-interview question sheet followed by a one-hour in-depth interview with each of the subjects. Questions centered on the corporate office's definition, support, commitment and philosophy of empowerment now and in the future.

These findings present interesting prescriptive accounts of the reception of empowerment processes. Currently four of the ten companies are empowering a limited selection of employees, namely front line staff. At existing staffing levels, all of the companies considered that they employed sufficient property managers to make operational decisions. All of the companies considered empowerment to be a long-term policy that needed slow and careful implementation. All senior managers considered empowerment to be an educational process that started at college and needed to be followed up with constant education and training in the work place. Senior managers further perceived that different levels of empowerment were appropriate to different countries and that this depended on educational levels and when the country opened up to outside (economic) influences. They further believed that empowerment could only be implemented when basic operational training needs, systems and standards were fully established. Senior managers held the opinion that in the Asian culture, employees did not want to take responsibility, and instead rely on the manager to make decisions. It is

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noted that the growth and development of empowerment in Hong Kong has been much lower than the western developed countries. There are difficulties to progress employee empowerment as; according to the training managers; staff can not be trusted; people have poor judgment; and the value system is different because of relationships between expatriates and locals.

It is also observed that before employee empowerment can be seriously considered, the following three conditions should be met. Firstly, the empowerment philosophy has to be supported by the corporate office, and the general manager has to be fully committed. Secondly, the desired outcome of the programme has to be agreed upon by the general manager and the executive committee. Thirdly, specific goals and target dates should be established.

More recently new professions have emerged, led by respected individuals to be flexible, skilled and visionary to accept changes as everyday part of working life. Facilities Management services is a newer profession for corporate institutions and government bodies to outsource their workplace noncore business. Here too the leading figures have experience in leading a team and technical knowledge of workplace management in such areas as tenancy administration, property management and logistic services (Becker, 1990). Similarly, an emerging Management Consulting culture is becoming essential to the survival of the service professions to think holistically, creatively and flexibly through chaotic environments (Gibson, Jones, Robinson & Smart, 1995).

THE IMPACT OF CULTURE

Empowerment requires the creation of a strong corporate culture which both encourages staff at all levels to feel they can make a difference and helps them acquire the confidence and skills to do so. Hirst (1992) and Simmons & Teare (1993) suggest that a commitment to service quality improvement requires the development of a "service-driven culture", or a "total quality culture", based on approaches to professional development which ensure greater employee empowerment, customer focus and continuous improvement. Culture and status play a big part in traditional Chinese firms. The concern of "losing face", by making a wrong decision, is so strong that no decision is often made.

Culture is to do with human values and behaviour. It has an element of thinking about TQM (Batten, 1994). Managers must be concerned with the culture of their organizations. There are activities generally described as a part of a TQM effort that directly lead to creating a cultural change.These characteristics as outlined in the Malcolm Baldrige Criteria include: (a) participative management and openness, supported by encouraging employee involvement, empowerment, the use of teams, education and training and extensive communication; (b) a rational approach by fact based decision making, clear mission, objectives, statistical tools and statistical process control, evaluation and improvement cycles, etc.;(c) flexibility with customer focus, continuous improvement and (d) integrity with emphasis on customer values, public responsibility.

As the business market becomes more globalised, as individual managers become more mobile and firms more international, so some convergence towards new globally defined professions might be expected. Traditionally a handful of largely Western countries have determined the state of the world economy and the way in which business is transacted. Hong Kong draws slightly on cultural traditions which are different from those of the Western countries and which have influenced their business practices. So, a new management style might emerge, one which will influence the new rules of business. Thus, despite convergence in professional practices, no blame culture, encouraging accountability and responsibility, may be important in determining from where manager in service market will emerge.

EFFECTIVE QUALITY TRAINING CURRICULUM

A joint study conducted by Developmental Dimensions International and the Quality and Productivity Management Association revealed that training is an integral and essential part of the TQM initiative. Executives and managers know that employees must be trained if they are to understand the concept of quality and to master the use of empowerment management (Svenson & Riderer, 1992).

Organisations that achieve success in quality related training efforts provide effective training in four stages. The first stage, *conceptual training*, exposes employees to the concept of quality and the impact it can have on an organisation, with relevant examples based on experience. Its effectiveness is greatly enhanced when it is followed up immediately with specific plans and changes in organisational systems that focus on the prevention of problems and on continually delighting customers by means of customer satisfaction measurement. Concept courses involve TQM Philosophies; Customer-Focused Organisation; Company Approach to Quality and Customer Satisfaction.

The second stage, *quality tools training*, provides the basic tools and training on how to apply them in the work environment. Employees should be given sufficient time to practise the skills they are being taught by hands-on experimentation with quality tools, such as data collection, histograms, cause and effect, graphs and pie charts. Quality tools courses consist of Team Leader Skills; Systematic Problem-Solving Model; Cause Analysis; Measuring Performance; Deciding on Solution / Process Improvements.

The third stage, *leadership training*, is aimed at executives and managers who lead the initiative. Managers who have completed leadership training need ongoing feedback to determine how successfully they are implementing the new management techniques. Leadership courses involve Strategic Quality Planning; Executive Leadership and TQM; Leading an Empowered Workforce; Building a High Performance Organisation: Issues and Options.

The fourth stage of training, *special topics*, addresses topics and aspects of quality specific to job functions. Special topics should be tailored to train employees in the right areas and paths for particular functions and levels of employees. Special topics courses consist of Information Technology; Benchmarking; Business Process Re-engeneering; ISO 9000; ISO 14000; ISO 18000; Quality Function Deployment; Empowerment Management; Malcolm Baldrige Award Criteria; TQM in Support Functions; Measuring Customer Satisfaction.

CONCLUSIONS

To sum up, TQM programmes that do not have management commitment and employee empowerment are bound to fail. Managers believe that, with top management commitment, by involving employee in problem solving, decision-making, and business operations, then performance and productivity will increase.

Even though Hong Kong has started empowering some employees with mixed success, it has not been perceived as a viable management style in Hong Kong for some considerable time. The reasons given for this can be due to a lack of perceived need, lack of understanding, lack of trust, lack of an open supportive company culture and Asian cultural inferences. In order to achieve any form of empowerment management, managers need to be committed and take employee suggestions and opinions seriously.

To be able to participate to empowerment, employees need to be sufficiently educated. Furthermore, the local education system is teacher centred, which leads to low initiative, enthusiasm, and self-confidence. The educational environment is not creating people who eagerly participate. The authoritarian style of management, which prevails in local companies, also hampers any form of participation of the employees. With supportive management and training empowerment does work in some selected property services companies. Employees should be encouraged to control their destiny and participate in the processes of the organisation. To be effective, employees should be given power, information, knowledge and rewards that are relevant to business performance.

TQM calls for a change of culture with the support of management that requires employee empowerment for quality improvement at all levels. Empowerment also leads to greater levels of satisfaction among the workforce whereas empowered employees give faster and friendlier service to customers as well. There is a significant, positive relationship between success with organisational process improvement and the presence of all three cultural elements related to quality improvement: customer focus, employee empowerment and continuous improvement.

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ASSESSMENT AND PREPARATION OF CAREER AND TECHNICAL EDUCATION TEACHERS: IMPLICATIONS FOR CURRICULUM DEVELOPMENT

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Index: Vocational education; teacher preparation; career and technical teacher education; curriculum development; alternative teacher education; teacher quality.

Abstract: The study was designed to determine the preparedness of a cohort of career and technical teachers to meet the requirements of the contemporary classroom. Using the field-based, competency-based alternative teacher education model operated by Temple University, it was determined that Temple University's career and technical education teachers felt well prepared to meet the challenges of the contemporary classroom. It was also evident that there were both similarities and differences in how teachers in academic disciplines and teachers in career and technical fields perceived their readiness to teach the next generation of students. Indicators in the study further suggest that there may be identifiable pedagogical competencies that could provide a framework for developing the curriculum for career and technical teacher education.

INTRODUCTION

In the next ten years the US educational system will educate 53 million young people and hire 2.2 million teachers (Riley, 1999). Several measures have been initiated at the national and state levels to meet this challenge. President Clinton proposed spending $128 million to improve the quality of teaching through the training of teachers to integrate technology into the classroom (White House, 2000). The US Congress also passed the appropriations act for fiscal year 2000 and re-authorized the elementary and secondary education act that will begin to address the quality of teaching in the public schools (US Congress, 1999). In order to provide an insight into how reform could be achieved in teacher preparation, the US Department of Education (USDE) examined and reported on the quality of teacher preparation in the US public schools (USDE, 1999).

In the Commonwealth of Pennsylvania, similar concerns prompted Governor Ridge to unveil a program that will provide an alternative route to teacher certification (Pennsylvania Department of Education, 1999). Following the initiative of the state administration, the Pennsylvania State Board of Education adopted changes to the governing rules for teacher preparation and qualification that will enable the State to meet the needs of the contemporary classrooms (Pennsylvania State Board of Education, 1998). In addition, Pennsylvania initiated a unique partnership program that brought together Microsoft Corporation and State agencies to train and certify the Commonwealth's teachers in cutting-edge technology for the classroom (Pennsylvania Department of Education, 1998).

The goal of the various measures is to ensure that there is a talented and well-prepared teacher in every classroom (USDE, 1998). Despite these efforts, some educators and government administrators are concerned about the preparedness of teachers to meet the needs of the 21st Century classroom (American Federation of Teachers, 2000; Riley, 2000).

Background

Educating the next generation of students and new teachers will weigh heavily on teachers presently in the workforce, and teacher education will assume a more significant role in developing teachers to meet the challenges of the classroom. However, in a study of teacher quality in the public schools - its preparation and qualifications - the USDE noted that less than half of public school teachers felt very well prepared to meet the challenges in the public school classroom (USDE, 1999). The study focused on teachers with academic assignments but did not reflect the perceptions of teachers who teach career and technical education subjects. Consequently, there was the felt need for a similar study that focused on career and technical education teachers, and a pilot study was designed for that purpose, using the career and technical teacher education program model of Temple University.

In addition to the traditional four-year campus-based approach, Temple University has utilized an alternative approach to prepare career and technical teachers for more than a quarter of a Century (Adamsky and Cotrell, 1975). The program is a field-based, competency-based model in which pedagogical experiences are provided to beginning career and technical teachers who enter secondary school classrooms directly from business and industry. The program is delivered off-campus through regional centers and individualized on-site helping conferences provided by Temple University teacher educators. To achieve program objectives, multiple teaching resources are employed, including individualized professional education plans, instructional modules and high-technology instructional media. The program enables teacher preparation to have a direct and immediate impact on career and technical students (Wash et al., 2000). It maintains a regular assessment schedule at various stages of delivery, with the overall goal to improve career and technical teacher education and its impact on career and technical education students (Hatfield and Gorman, 2000; Wise and Liebrand, 2000). The program, thus, provides a framework for examining the preparation of career and technical education teachers, and the present study was designed for that purpose.

The purpose of the study

The purpose of this pilot study was twofold. It was designed a) to determine if a cohort of Pennsylvania career and technical teachers felt well prepared to meet the challenges of contemporary classrooms, and b) to examine the perceptions of graduates of an alternative career and technical teacher preparation program operated by Temple University against the perceptions of conventionally prepared general education teachers. The expectations were that, collecting this information would contribute to a discussion about program enhancements as well as the need for comprehensive studies of career and technical teachers in Pennsylvania and the United States.

Methods

Participants

All participants in the study were practicing career and technical education teachers prepared through Temple University's field-based, competency-based alternative teacher education program. All had received Pennsylvania's Career and Technical Instructional Level II Certificate between 1990 and 1998, and all were certified in trade and industrial education subjects. One hundred and fifty-two teachers were identified in eastern Pennsylvania public schools.

Instrument

A survey questionnaire was developed, using information from the USDE's report on teacher quality and Temple University's field-based, alternative teacher education program. The questionnaire was divided into four sections relating to 1) situational data, 2) teacher education program characteristics, 3) program contribution to teacher preparation, and 4) perceived teacher preparedness. Sections 2, 3 and 4 of the instrument were designed to collect data on a six-point Likert scale.

Data collection and Analysis

One hundred and fifty-two questionnaires were mailed to practicing career and technical education teachers identified in eastern Pennsylvania, and 34 or 22.37 percent responses were returned. A test of the data for non-respondent bias yielded a Pearson correlation coefficient of .91 ($r = .91$, $p \leq 01$), thus, confirming that the respondents adequately represented.the population. The Statistical Package for Social Sciences (SPSS 4.1) was used to analyze the data, using descriptive statistical techniques and factor analytical techniques. A factor analysis of the variables resulted in 9 factors that formed the basis for discussing the implications of the findings. (See Table 1).

Table 1: Teacher Preparation Program: Factor Components and Related Elements

Components	Elements
• Academic preparation	Coursework, basic academic skills, and clinical experience
• Curriculum and performance standards	Development, evaluation, implementation and utilization
• Diversity in the classroom	Working with students with diverse needs and backgrounds
• Learning environment	Access, facilities and resources
• Occupational competency	Professional knowledge and occupational skills
• Professional development	In-service staff development activities, workshops, academies, and professional conferences
• Support systems	Peer collaboration, administration's encouragement, community involvement, parents' participation and teacher networks,
• Teaching methods and skills	Planning strategies, delivery strategies, classroom management skills, student performance evaluation skills, and reflective teaching skills
• Technology	Evaluation, selection, and integration.

Findings

The key findings are summarized under four categories: situational data, teacher education program characteristics, curriculum contribution to teacher preparation, and teachers' perceived preparedness.

Situational data

The findings indicated that a little more than 88 percent or 30/34 of career and technical teachers worked in their occupational fields for 5 years or more before making the career change to teaching. A little more than 44 percent or 15/34 of career and technical teachers held a 4-year college bachelor's degree or higher, and nearly all career and technical teachers, 97 percent or 33/34, taught subjects in the occupational field in which they were certified.

Teacher education program characteristics

The data analysis indicated that Temple University's career and technical teacher education program was designed to address all the components identified in a factor analysis and summarized in

Table 1

Program contribution to teacher preparation

- A very large number of career and technical teachers, 82.4 percent or 28/34, reported that their academic coursework contributed very much to their teacher preparation.
- A large number of career and technical teachers, 77.4 percent or 24/31, indicated that the use of state or school district curriculum contributed much to their teacher preparation.
- A very large number of career and technical teachers, 84.8 percent or 28/33, indicated that understanding the need to support students with disabilities contributed very much to their teacher preparation. Similarly, a large number of career and technical teachers, 64.0 percent or 16/25, reported that understanding the need to support students with culturally diverse backgrounds contributed somewhat to their teacher preparation.
- Nearly 90.0 percent or 30/34 of career and technical teachers reported that the learning environment contributed very much to their preparation for teaching.
- The vast majority, 93.7 percent or 30/32, of career and technical teachers reported that having an in-depth knowledge of their occupation contributed very much to their preparation for teaching.
- A little more than one-half, 52.9 percent or 18/34, of career and technical teachers reported that professional development activities contributed very much to their preparation to teach.
- A large number, 76.5 percent or 26/34, of career and technical teachers reported that all forms of support systems contributed very much to their preparation to teach.
- Nearly all career and technical teachers, 94.1 percent or 32/34, reported that the knowledge of effective teaching strategies contributed very much to their preparation for teaching.
- A large majority, 72.7 percent or 24/33, of career and technical teachers reported that the integration of educational technology into their curriculum contributed very much to their preparation for teaching.

Perceived teacher preparedness

- Nearly three-fourths of career and technical teachers, 73.5 percent or 25/34, reported that they felt well prepared or very well prepared to continue with academic coursework.

- A large majority, 78.8 percent or 26/33, of career and technical teachers reported feeling well prepared or very well prepared to implement state or school district curriculum and performance standards.
- A little more than one-half, 52.9 percent or 18/34, of career and technical teachers indicated that they felt well prepared or very well prepared to support the instructional technology needs of students with disabilities. However, only 38.2 percent or 13/34, of career and technical teachers reported feeling well prepared or very well prepared to serve the needs of students with limited proficiency in English.
- All career and technical teachers, 100 percent or 34/34, reported that they felt well prepared or very well prepared to provide instruction in their subject area.
- A large number, 69.7 percent or 23/33, of career and technical teachers indicated feeling well prepared or very well prepared to continue with professional development activities.
- Only 43.8 percent or 14/32 of career and technical teachers reported feeling well prepared or very well prepared to assist other teachers integrate computer technology into their curriculum.
- Nearly all career and technical teachers, 97.0 percent or 32/33, reported feeling well prepared or very well prepared to deliver instruction utilizing effective teaching methods and strategies.
- A little more than three-fourths, 76.5 percent or 26/34, of career and technical teachers reported feeling well prepared or very well prepared to integrate educational technology into their curriculum. However, only 21.6 percent or 6/28 indicated feeling very well prepared to employ innovative technologies such as the Internet and multimedia programs in delivering instruction.

The study found that there were similarities and differences in how teachers in academic disciplines and teachers in career and technical subjects perceived their preparedness to meet the demands of the contemporary classroom. Compared to 99 percent of teachers in academic disciplines, only 44 percent of teachers in career and technical education hold a 4-year college degree, baccalaureate or higher. However, compared to 97 percent of career and technical teachers, only 79 percent of English teachers, or 78 percent of mathematics teachers, or 89 percent of social studies/social science teachers teach the subject they are certified to teach. The following table summarizes differences in teachers' perceived readiness to implement program requirements in the classroom.

Table 2. Summary of Differences in Perceptions between Academic Teachers and Career and Technical Teachers about Teacher Preparedness for the Contemporary Classroom

	Percentage of Teachers	Well Prepared
Area of Preparation	Academic	Career and Technical
Integrating educational technology into instruction	20	76
Integrating new technologies such as the Internet into instruction	20	21
Meeting the needs of students with limited English proficiency	20	38
Supporting students with special needs such as disabilities	20	53
Using performance assessment instruments to evaluate students	28	43
Implementing new teaching methods and strategies	41	97
Implementing state or school district curriculum and performance standards	36	79

Conclusions

Four conclusions were made from indicators in the study. First, the findings indicated that career and technical education teachers felt well prepared to meet the needs of the contemporary classroom. Second, the findings indicated that certain program attributes facilitate teacher preparation and need to be included in career and technical teachers' curriculum. Third, career and technical education teachers need professional development in certain program aspects to enhance their competencies. Four, there are differences and similarities in how teachers in academic disciplines and career and technical education perceive their preparedness for the challenges of the contemporary classroom.

Implications for teacher preparation

Indicators in this pilot study provide several lessons for career and technical teacher preparation and curriculum development. First, the indicators provide an insight into what teachers think about their preparation and what makes teacher preparation effective. Second, while a large number of career and technical teachers have indicated that they felt well prepared to meet students' needs in the emerging classrooms, the data indicate that there are still specific areas of concerns that need to be addressed, if teachers were to realize their full potential. In program areas such as technology integration, support for students with special needs or diverse backgrounds, and employing assessment and evaluation tools, career and technical teachers would benefit from staff development activities. Indicators in the study may well suggest that the identified program attributes provide a framework for curriculum development in career and technical teacher education (See Appendix A).

Recommendations

Based on the preceding discussions, the following recommendations are made for future study.

1. A study should be conducted that examines the contribution of specific program components to the effectiveness of career and technical teacher preparation.
2. All participants in the study were certified in trade and industrial disciplines. Future studies should include teachers in other subject areas in career and technical education in order to provide a broader insight into teacher preparation in career and technical education.
3. This study was limited in scope and depth because of the small number of participants and it is recommended that the study is replicated with a larger population.

Summary

Several million young people will be educated in the US in the next few decades and teacher preparation is key in meeting the needs of teachers for the next generation of students. A study by the US Department of Education provided an insight into the preparation and qualifications of teachers in the academic disciplines in the public schools, and thus, gave us a rationale for developing teachers in the academic disciplines for the contemporary classroom. However, the study left out career and technical education teachers. Therefore, the present study focused on teachers in career and technical education and found that teachers prepared through the alternative education program at Temple University felt well prepared to meet the challenges of the contemporary classroom. The study provided an insight into what career and technical education teachers perceived as contributing factors to their preparation to teach, and thus, gave us a protocol that may be considered in the design of career and technical teacher education curriculum.

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APPENDIX

Appendix A: A Framework for Developing Career and Technical Teacher Education Curriculum

Curriculum Component	Component Elements
Academic preparation	• Coursework • Basic academic skills • Clinical experience
Curriculum and performance standards	• Development • Evaluation • Implementation • Utilization
Diversity in the classroom	• Working with students with diverse needs • Working with students with diverse backgrounds
Learning environment	• Access • Facilities • Resources
Occupational competency	• Professional knowledge • Occupational skill
Professional development	• In-service staff development activities • Workshops • Seminars and academies • Professional conferences
Support systems	• Peer collaboration • Teacher networks • Administrative encouragement • Community involvement • Parents' participation
Teaching methods and skills	• Planning strategies • Delivery strategies • Classroom management skills • Student performance evaluation skills • Reflective teaching skills
Technology	• Evaluation • Selection • Integration

WHAT'S HAPPENING IN YOUR TEACHER EDUCATION PROGRAM?

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Index: Teacher Education; Program Examination; "Generative" leadership, Planning framework, Research framework, Program VITAL

Abstract: Six questions are presented, the answers to which will enable program administrators to gain valuable insights to their current or proposed teacher education program. Consideration of program aspects as perceived by participants at all levels can assist in the planning of appropriate interventions to mitigate complications. The questions were used in a recent study of the alternative vocational teacher education program at Temple University, known as VITAL. Responses to the questions revealed a cluster of themes that converged to form a concept identified as "generative" leadership. Generative leadership appears to be a major influence in the success of that program. Program developers will find that considering these six questions will facilitate the planning of an effective and successful teacher education program.

INTRODUCTION

Questions for Program Administrators:

What are your program goals?
How would you describe your attitude toward your program?
How does the structure of your program affect its coherence?
How is research employed in your program?
How do you arrange for passage through your program?
What expectations do you have of your program participants?

Many questions beset program developers as they pursue the initiation or revision of a teacher education program. To produce an effective program, developers should have some degree of predictability as to how participants at all levels might function in the system. One may ask how this important information can be obtained? A recent inquiry into vocational teacher education programming reveals that six simple questions can produce surprising insights.

While program developers consider many things when initiating a new venture, program administrators can review past performance to project future trends and possible program revision. Employing the six questions in the planning phase can enhance aspects of an existing situation and identify potential pitfalls in a future endeavor. Obviously, answers to the questions for a potential program must be of an anticipatory nature. Using the questions as a basis for a planning framework can assist developers in the identification of a desirable result. They can then move forward to design suitable interventions to achieve that outcome.

Disclosures, some of which may be surprising, can be of great assistance to program administrators and developers as they strive to achieve program success. Answers to the six questions can be gathered from a variety of sources. In a study of Temple University's Program VITAL (Vocational Intern Teaching/Applied Learning), five research questions were designed to elicit oral and written views of program aspects (Howey & Zimpher, 1989). However, as past and present program participants discussed roles and experiences, repeated themes converged to pose the possibility of yet another question worthy of consideration. Indications are that the use of the six questions in a planning and/or research framework can be the key to successful modification of an existing program or an aid in the development of a new program.

The categories of goals, attitudes, structure, research, and passage represent the initial five questions. Disparate responses from the original work exemplify the variety of responses and illustrate the range of perceptions on the part of individuals in all levels of a program hierarchy.

Goals

Question One. How do participants describe the goals, expectations, or outcomes of the program?

The response from a program administrator was succinct and straightforward, "The goal is to offer each learner an individualized program having flexibility in delivery, but the outcome is teacher competence." However, some students offered these comments, "I need a clear understanding of what is expected." And "There is a complete breakdown of communication."

Attitudes

Question Two. How do participants express their attitude and identification with the program?

One administrator stated "It is challenging to constantly train new teachers, but it is part of being dedicated to one's profession." But some students commented, "I just wanted to get it over with."

Structure

Question Three. How do participants describe the structure and coherence of the program?

Program framers described the program as "A closed loop, based on validated competencies." Some students saw it as "Confusing."

Research

Question Four. How do participants perceive external and internal research in the program?

Administrators see external research as "A means to keep the program current." One student saw it as, "One more thing to throw at us." Staff members saw internal research as ". . . providing needed information." However, some students tried to manipulate the process with remarks such as, "My instructor is unfair."

Passage

Question Five. How do participants view their place in the program?

Program developers see the passage as,"A process to assist students in their transition to educators." Some students commented, "Every time I turn around, something changes."

Commentary

Obviously, the selected responses represent extremes. However, arbitrary comments during conversations revealed unanticipated perspectives within the program being examined. For example, early in the study, one fact that could not be ignored was that views formulated over time. Also, evidence of planned intervention to facilitate positive impressions began to emerge. It became evident that positive personal characteristics permeated the program in thought and action. As the study progressed, those characteristics which appeared at first to be individual, i.e., altruism, vision, dedication, and persistence, blended to form a sixth concept that is identified as "generative" leadership. Thus, we have one more descriptor:

Generative Leadership

Question Six. How do participants manifest generative leadership?

The notion of generative leadership began to unfold with comments such as this from one administrator, "It's my job to provide renewed energy and move people on." This is reinforced by the words of one student, "The most valuable thing was the care and direction that made me comfortable forming and expressing my own views."

DISCUSSION

The research introduces the phenomenon of generative leadership and emphasizes its influence in program planning, revision, and development. Evidence indicates that generative leadership is self-renewing, inspiring participants to move forward and motivate those in all directions of the hierarchy (Heberley, 1999). Clearly, it is advantageous to employ a philosophy that is multidirectional and comprises specific attributes such as the desire to be an agent of change, the acceptance of challenge, the allocation of time, and attention to ongoing research. These characteristics combined with those listed earlier, make generative leadership is a winning stratagem for any program. How does it come into being? In the program studied, the originators were highly motivated, and cognizant of the importance of imbuing participants with the shared vision. Those who followed have been able to carry on that vision and through careful planning, keep the phenomenon viable (Walker, 1997).

Why is this valuable to planners of new or revised programs? Generative leadership is not an accident. It is deliberate, planned, and properly executed. It generates enthusiasm, creativity, and promotes a positive work ethic. It produces an energy that is transmitted through the faculty to prospective teachers who go on to inspire their own students.

A primary benefit of generative leadership is the advancement of positive convictions in program participants. Secondly, participants and those who move on are infused with the ideology of self-renewal and revitalization. Its manifestation throughout the hierarchy of a program appears to be essential to the longevity and success of that program.

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STRESS MANAGEMENT FOR TEACHERS IN VOCATIONAL EDUCATION AND TRAINING SECTOR

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Index: Managing Change, Classroom Behaviours, Win/Win Solutions.

Abstract: Much of the stress of teaching is related to problem behaviour in the classrooms. The most effective way of managing behavioural problems is to prevent them from arising, and to minimize their occurrence. The focus is the teacher's ability and willingness to create a successful learning situation appropriate to the student's needs. Essentially, stress can be a challenging, exciting stimulus to personal growth, whilst excessive stress can prove damaging to psychological and physical health because it often triggers emotional and physical strain that may be harmful. So, people are motivated to cope with stress. However, the reactions to stress and its adaptive value vary from one person to the next and from time to time for the same person. Decisions about how to cope can consequently be complex. Thus, this paper will highlight some of the more adaptive stress coping strategies, with examples and cases drawn from the authour's experiences in teaching as well as from research towards secondary school teachers in Hong Kong.

INTRODUCTION

Occupation provides an important source of need satisfaction (Arnold, Robertson, and Cooper, 1993). For example, a job is attractive because of the external rewards it can bring from pay, grades, rewards, obligations and approval. In contrast, a person may be motivated intrinsically when his/her higher levels of needs are met, such as job activities which bring respect, admiration, allows for development of personal potential, competence or means of self-fulfillment. Job satisfaction is of great importance because it is an important domain of life that influence satisfaction (i.e. family, health, community, work and spare time activity etc.).

STRESS PERCEPTION AND COPING

Some experience of stress and anxiety is normal. Indeed, mild stress can actually be beneficial and produce alertness and interest. Some stress is invited, especially that which produces enjoyment and motivation in work and life (Selye, 1984). However, the level of stress one perceives varies greatly from one person to another (Carver, Weintraub and Scheier, 1989; Fontana, and Abouserie, 1993). If stress is not managed properly, it can damage performance. Prolonged stress and anxiety may lead to physical illnesses (Maslach and Jackson, 1993). Emerging problems and some adaptive coping strategies are discussed.

Classroom discipline, student violence and apathy. Most of problems raised by teachers are related to discipline or study problems of students. Problems appear more significant for academically low achieving students. Sometimes these problems manifest themselves as physical or verbal abuse, yet more often they present themselves as minor yet disruptive behaviour which, whilst not immediately challenging the authourity of the teachers, demand the expenditure of inordinate amounts of teacher time and energy. Some teachers may place the blame for behavioural and academic problems on the students' poor standard, inattentiveness and laziness. These teachers become defensive and irritated when confronted by students' misbehaviour, they find it difficult to look hard at themselves, their methods and attitudes. On the other hand, others will reflect and evaluate on their teaching practices to see if they have contributed to the observed problems. Kounin (1970) reported that there is no difference between more and less successful teachers in terms of effectiveness in dealing with behaviour problems, but successful teachers are seen to be far more adept at preventing them. Bull and Solity (1993) have outlined some of the constructive ways to deal with problem behaviours:

- Intervene as early as possible,
- Use the lowest level of intervention necessary, according to the misbehaviour and its effects on learning, relationships and safety,
- Keep the time and attention given to misbehaviours to a minimum,
- Handle misbehaviours in a firm and matter-of-fact way; avoid showing unwanted behaviour for the teacher himself,
- Once dealt with, misbehaviours should be treated as finished; any counselling should take place at other times,
- Use all corrections consistently and fairly,
- Take active steps to teach and maintain appropriate behaviours; use far more rewards than corrections,
- Use misbehaviours as pointers to improvements for one's classroom management.

Teachers find that misbehaved students are mostly under-achievers, they tend to have low self-concept, which often results in a lack of motivation for learning. They often feel insecure and alienated from school. These students respond to failure by focusing even more on their own inadequacy; their attitudes toward assignments may deteriorate even further (Ames, 1985). So, intervention of students' misbehaviour should be non-judgmental to prevent students from retaliating. Students should be guided to learn how to take responsibility of their own actions without the feelings of shame, humiliation and being ridiculed. Feedback also plays a crucial role for the student in defining his or her self-perception of ability. If the performance is satisfactory, future tasks are likely to be approached with confidence (Charlton and David, 1994). Consequently, classroom events shall be tackled systematically and consistently so that students will learn to behave in a desirable manner and be rewarded for doing so. Where behaviour problems arise in schools, it may be difficult to determine or explain precisely why students behave as they do, as behaviours are affected by a whole range of variables, usually in combination. For example, expectations from teachers, parents and the students themselves can be influential. They will reflect the ways in which students predict their own performance level and shape their achievement orientation, actual performance and attribution for success (Yee, 1992). Self-expectation is learned as it depends on previous experiences. It is, in part, influenced by teachers, parents and others, who signal their expectations through their interactions with individuals. Students with learning difficulties tend to have low self-esteem and low expectations of themselves. If expectations from teachers and parents are unrealistic, students may precipitate fears and anxieties within them which cause untold misery and unhappiness, then motivation to learn is lost. However, over permissiveness may also create anxieties, as students may require boundaries or guidelines within which they can act and feel secure (Clarizio and McCoy, 1983).

Demand on Time. One of the most frequently cited work-related stress factors is the demand on time. The excessive paperwork duties takes time away from teaching duties. The stress engendered by paperwork is almost certainly related to teachers' perceptions of a lack of professional respect accorded them. Time spent on paperwork is not just inconvenient but is an additional burden on top of an already too busy day. Good time management helps teachers to manage the ever-increasing level and complexity of work demands. Basically, it involves managing oneself and others(Covey, 1989). Teachers are found to achieve satisfaction from their work differently which has an impact on time management. For instances, some teachers consider task satisfaction to stem from carrying out work to a higher standard than other teachers. Not surprisingly, these teachers found it hard to delegate. Similarly, some teachers were only satisfied if the work was as near to perfection as possible. Likewise, these teachers have found it hard to meet deadlines. Still, there are teachers whose social satisfaction comes from solicitous care of students. They may be too keen to offer help to students and others, which take away times for essential tasks. Inability to manage time effectively may cause inconvenience to others, the institution will lose its efficiency. Furthermore, extended working hours will be detrimental to the personal life of the individual. More importantly, it may lead to important tasks being neglected in favour of urgent ones. The enemy of the "best" is often the "good." So, one must keep in mind to be able to say "no" to something if it is not to the apparent, urgent things in life.

In essence, effective time management is putting first things first (Covey, Merrill, and Merrill, 1999). In the essay "The Common Denominator of Success" written by E.M. Gray, that the successful person has the habit of doing the things Failures don't like to do, they don't like doing them either necessarily. But their disliking is subordinated to the strength of their purpose (Covey, 1989). Drucker (1954) explained that effective people are not problem-minded, they are opportunity-minded. They feed opportunity and starve problems. They think preventively. They have genuine crises and emergencies that require their immediate attention, but the number is comparatively small because they constantly strike a balance and keep focus on the important, but not urgent, high leverage capacity-building activities. As a consequence, one's effectiveness would increase dramatically. The crises and problems would shrink to manageable proportions because of one's actions in thinking ahead, working on the roots, doing the preventive things that keep situations from developing into crises in the first place.

Furthermore, effective time management requires organization, planning, prioritising, communication, trust and discipline. Plans must be reviewed and adapted in the light of opportunities or difficulties in response to the needs and wants of individuals, families or to possibilities that open up as a result of new developments. Covey (1989) suggested six important criteria to the organisation of time. The first is coherence. Coherence suggests that there is harmony, unity, and integrity between one's vision and mission, roles and goals (both short- and long-term), priorities and plans, desires and discipline. The second is balance. Balance is a tool to keep balance in one's life so that the individual will not neglect important areas such as health, family, professional preparation, or personal development. Covey (1989) stressed that many people seem to think that success in one area can compensate for failure in other areas of life, but can it really? "Perhaps it can for a limited time in some areas. But can success in your profession compensate for a broken marriage, ruined health, or weakness in personal character? True effectiveness requires balance" (p.161). The third is focus. It is a tool that encourages, motivates and actually helps a person spend the time dealing with prevention rather than prioritising crises. The fourth is people. One would need a tool that deals effective with people, not just schedules. It is focused on effective, synergistic interaction with people. The paradigm is people first, things second. It is leadership first, management second. It is effectiveness first, efficiency second. It is purpose first, structure second. It is vision first, method second. The fifth is flexibility. The planning tool should be the servant instead of one's master. The plan should be tailored to one's own style, needs and particular ways. Finally, the tool should be portable so that it can be carried with the person most of the time within reach and to facilitate constant reviewing.

Teachers have always worked under pressure and for many, today's pressures outweigh their ability to cope with them, resulting in stress related symptoms. In terms of health-related behaviour, when people are under stress, they often do not take proper care of themselves. For example, teachers reported that they frequently take students' assignments and exam papers home to mark. They may skip meals or snack on junk food. People under stress cease normal exercise routines and become sedentary. These behaviours may impact upon the immune system and so reduce the body's ability to fight disease. This behaviour may also affect the general functioning of the body and may contribute to the development of illness. If stress are 'bottled up' for long periods, there are risks of psychosomatic symptoms such as headaches, stomach upsets, nervousness, sleep disturbances, depression, fatigue, high blood pressure and skin disorders as reported by many stressed teachers (Cole and Walker, 1989; Travers and Coopers, 1990). Thus, stress may indirectly affect health by reducing positive health behaviours and increasing negative ones.

Managing Stress through Exercising. People who have made concerted efforts to improve their physical health and well-being have made great differences to their ability to manage effectively whilst those who do not wish they have addressed the issue earlier. Exercise generates more energy than it uses. Professor Steptoe and his colleagues (The Health Promotion Research Trust, 1989) have found that normal adults benefit psychologically from regular physical activities. Moderate exercise schedule, about 20 minutes of vigorous rhythmic exercise three or four times a week, is enough to reduce tension and anxiety, clear up mental confusion and improves ability to cope with stress. The reason is that although the heart is a muscle, it cannot be exercised directly. It can only exercise through the large muscle groups, particularly the leg muscles. That's why exercises like rapid walking, running, biking, swimming, cross-country skiing, and jogging are so beneficial.

Coping with the pace of change. The second factor raised by teachers is the demands as a result of frequent changes in social, technological and educational policies. On the positive end, it has revolutionize communications, video technology creates new teaching techniques and provides an analytical tool to fasten improvement. On the downside, they make current knowledge, skills and values obsolete. They need to take extra time to learn new concepts and techniques, revise curriculum from time to time and subsequently all the notes, worksheets and activities to cater for the changes. Additionally, there are related meetings and paper works associated with proposed changes. Change scares some people because it often begins with feelings of disequilibrium, incompetence and discomfort (Whitaker, 1995). This dissonance leads to a drive to restore equilibrium. Possible consequences are that they reject, suppress and distort their perceptions of reality rather than face the inevitable stress of handling it. So, the major obstacle to the implementation of new policies, goals or methods of operation is the resistance of people to change. Resistance to change comes in two forms—systematic and behavioural (Plant, 1987). Systematic resistance tends to occur when there is a lack of knowledge, information, skill and managerial capacity. Behavioural resistance is more emotionally centred and derives from the reactions, perceptions and assumptions of individuals and groups in the organisation. Lack of trust, for example, is much more difficult to manage than lack of information or the lack of resources. It is suggested that in order to reduce the resistance, the managers should increase participants' levels of involvement and information, listen to the experience of those involved in change and seek to understand what is felt to be threatened. The managers need to be deeply caring and concerned about what it is that staff feel they are having to give up and to be seen as an ally and not as an opponent in the change process. Much pain and discomfort can be avoided if these ideas can be incorporated in the values and assumptions that underpin approaches to management and leadership. A great deal of stress within organisation staff can be traced back to insensitive and clumsy handling of innovation and change.

Relations with others. The third factor reported by teachers is connected with interpersonal relationships with their students, co-workers or superiors. There are different believes that teachers hold regarding their relations with students. Some teachers believed that teachers should be more authouritative and always keep a distance from the students if they are to effectively manage class discipline. This group of teachers appears to experience frequent confrontations with students (Ormrod, 1995). In comparison, some teachers have adopted a more permissive style, although when necessary, will adopt an authouritative approach. Teachers who adopt a more democratic approach report good student/teacher relationship. In schools where the culture is highly Power oriented facilitates the existence of office politics. Lack of recognition for good teaching, lack of participation in decision-making and a lack of friendly atmosphere among staff characterise the climate in those schools. In this circumstances, if a large reserve of trust is not sustained by continuing deposits, relations between people will deteriorate. Instead of rich, spontaneous understanding and communication, the situation becomes one of accommodations, where people attempt to work independent lifestyle in a fairly tolerant way. The relationship may further deteriorate to one of hostility and defensiveness. The "fight or flight" response creates verbal battles, slammed doors, refusal to talk, emotional withdrawal and self-pity which end up in cold war, endless confess of the sins of one another and a loss/loss political battle. But there really is no quick fix. Building relationships are long-term investments and repairing relationships takes time.

To act effectively in interpersonal contexts, there is a need to develop an understanding of the various forces that affect the ways in which groups of people work together in order to develop an awareness of the options in choosing how to behave towards each other. The development of interpersonal skills involves looking inwards (Covey, 1989). This presupposes that until one can understand oneself, the individual will have difficulties in improving one's relations with others. Requisite qualities are: communication skills, cooperative skills and interpersonal skills. Qualities such as personal warmth and an ability and willingness to project a genuine interest in others, the ability to promote the owning and sharing of personal ideas and feelings with appropriate others, and being receptive to the need of others to do the same are also important. A 'good' interpersonal climate is one that is relatively free of power differentials, competition and unfavourable comparison of one individual with another. However, this is not the usual institutional climate as highlighted by teachers in many educational settings (Dunham, 1992). Teachers who have perceived a lack of personal control as a result of the authourity structure feel helpless and are afraid that their efforts to cope will lead to failure, embarrassment and signs of inadequacies. This in turn leaves them with feelings of uncomfortable about not being able to reciprocate, or with the belief that his or her personal control is limited by it. This helps to explain why this group of teachers have reported severe stress level even though they have used a number of constructive stress coping techniques whilst others working in similar environment have reported comparatively less stressful.

Conflicts in teaching philosophy. Finally, the tension in the work of teaching is cast in terms of conflicting teaching philosophy and institutional demands (Feiman, and Floden, 1986). From the perspective of the teachers, teaching includes all those aspects directly related to the realization of educational goals: motivating students to learn, assessing knowledge, getting to know them as individuals, etc. Teaching is a balanced system in which all components support and align to each other. Imbalance in the system will lead to a breakdown to poor teaching and surface learning. Non-alignment is signified by inconsistencies, unmet expectations and practices that contradict what a teacher preaches. Many teachers reported that traditional transmission theories of teaching ignore alignment. The common assessment method of determining students' academic achievement is to compare their performance to each other ('norm-referenced'), rather than on whether an individual's learning meets the objectives ('criterion-referenced'). They criticised that school administration and policies from local education authourity always dominate the professionalism of teachers. The assessment criteria fails to project inherent relations between what is taught and what are tested Brown and Knight (1995). They also voiced constraints due to some administrative requirements and resource limitations that make alignment difficult, for example, summative assessment in the form of tests and examinations are often used to discriminate and filter students for promotion to higher education which encourage surface approach to learning.

CONCLUSION

Job dissatisfaction may produce reactions which are detrimental to the individuals as well as to the organization's aims and objectives (Arnold, Robertson and Cooper, 1993; Edworthy, 2000). If feelings of being anxious are slight, teachers may experience a sense of stimulation and alertness which is pleasurable rather than stressful. Excessive demands may initiate the arousal of higher levels of anxiety. These may be unproductive in the sense that a teacher's ability to make decisions is impaired or the ability to concentrate is reduced. There may be a sharp loss to confidence in teaching. Therefore, the identification of stress in relation to job satisfaction and the way teachers cope with stress is the central theme of this paper. To conclude, on the one hand, teachers are restricted by the institutional climate, the rules and procedures set by administrators, that they have to follow as best as they may. As to the classroom climate, that is more under their control. Most serious problem behaviours demand more time, energy and greater expertise than lesser ones, it seems more sensible, wherever practicable, to prevent problems arising, or less serious ones escalating. In addition, it is also important that the wanted behaviour should be rewarded consistently, firmly and fairly over time. The kind of atmosphere they create --authouritative, democratic, permissive, open, cold and warm -- can remarkably affect the effectiveness of a teaching approach. All aspects of teaching are mutually supportive, each is an integral part of the total system, not an add-on. To align constructively, it is part of the teachers' role to reflect on their present skills and their style in order to analyze and remedy weaknesses for themselves and identify and build upon strengths. Spoon-feeding does the work for the students, so that they have little left to do but obediently swallow.

It is fair that everyone, no matter he is rich or poor, has 24 hours in a day, so, it depends on how efficiently and wisely one can in the use of time. No one can extend the length of life time for an hour more, however, one can adjust the breadth to make it more enriching and fulfilling. People who make efforts to adapt become more resilient to the stresses and strains and they can fight off infections more easily. People who make efforts to change their lifestyles, such as eating the right kinds of foods, getting sufficient rest and relaxation, and exercising on a regular basis, are seen to be more healthy. But individuals who ignore their lifestyles are likely to experience ill health.

Finally, one of the most identifiable constraints affecting teachers' choices of coping strategies is perception of their ability to control. People's perceptions can be vastly different. They have lived with their paradigms for years, thinking they are "facts", and some of them may even question the character or the mental competence of anyone who cannot see the facts. So, if a teacher is very frustrated because his superior is locked into what he feels is an unproductive leadership style, how can he/she transcends the limits of his/her perceptions so that he/she can deeply communicate, and cooperatively deal with the issues and come up with Win/Win solutions? The deepest hunger of the human heart is to be understood. Seeking to understand requires consideration whilst seeking to be understood takes courage. In order to strive for a Win/Win situation, it requires a high degree of both qualities. The essence of achieving synergy is to value differences--to respect them, to build on strengths, to compensate for weaknesses (Covey, Merrill, and Merrill, 1999).

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MINING LABOUR MARKET INFORMATION FOR USE IN DEVELOPING AN IT MANPOWER PREDICTIVE MODEL

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Index: Data Mining, Artificial Neural Network, Statistical and Mathematical Technique, Labour Market Information, Manpower Predictive Model

Abstract: To improve the information content of the data and to empower knowledge workers of today and tomorrow, the latest "hot" technologies that have emerged on the client/server arena are focused on filtering unnecessary data and presenting the valuable information in a user-friendly, intuitive, and easy to understand way. One of these technologies is data mining. This paper will highlight the significant of discovering meaningful new correlations, patterns, and trends by digging into (mining) large amounts of labour market information (LMI) stored in databases, using artificial-intelligence (AI) and statistical and mathematical techniques. For experimental purpose, a manpower predictive model will be built upon the LMI to forecast the manpower requirement of the IT sector. The IT manpower predictive model is essential for planners in business, government and academia to derive an appropriate vocational education and training plan to meet the needs of the industry.

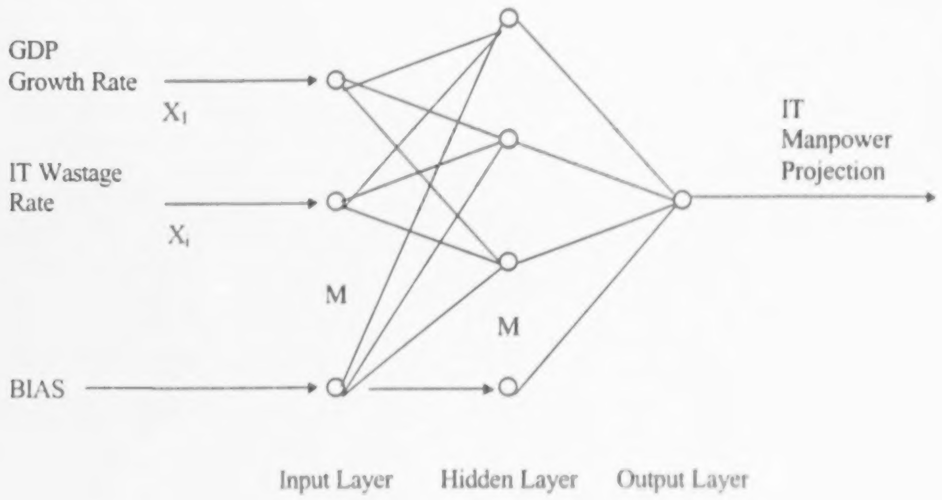
INTRODUCTION

How does data mining work? It isn't magic. Instead it works the same way a human being does. It uses historical information (experience) to learn. However, in order for the data mining technology to pull the "gold" out of your database, you do have to tell it what the gold looks like (i.e., what business problem you would like to solve). It then uses the description of that "gold" to look for similar examples in the database and uses these pieces of information from the past to develop a predictive model of what will happen in the future.

As IT is a rapidly changing and developing field, an accurate manpower predictive model is required for vocational training and educational planning purposes. Since it takes a number of years to educate and train people for the IT jobs, the industry needs must be anticipated sufficiently far in advance to allow time for that training. Failure to anticipate the needs and to develop the required high level IT manpower may seriously impede economic progress.

This paper demonstrates on how to develop a manpower predictive model using feed-forward artificial neural network (ANN) (as shown in Figure A) by going through the process of data analysis, parameters setting, and model training and testing. The historical information (such as IT vacancy rate, IT wastage rate, unemployment rate, emigrant growth rate, GDP growth rate, wages/earnings growth rate, consumer price index, and labour force participation rate) which might have an influence on the IT manpower requirement will be used for developing the predictive model.

Figure A Feed-Forward Artificial Neural Network



ARTIFICIAL NEURAL NETWORKS (ANNs) MODEL

ANNs are often represented as automated data mining techniques. While they are very powerful at building predictive models, they do require significant data preprocessing and a good understanding and definition of the predictive target. Usually normalizing predictor values between 0.0 and 1.0 and converting categorical to numeric values is required. The networks themselves also require the setting of numerous parameters that determine how the neural network is to be constructed (e.g., the number of hidden nodes).

An effective modeling tool (that discovers relationships from a database of examples) can generate a compact module that captures from simple linear to complex, non-linear relationships in a form that is readily executable. It excels at modeling systems such as fuzzy estimation, probabilities, expert experience and judgment, process sensor measurements and control strategies.

Experiments

Setting

The following procedures will guide us through a demonstration of modeling tool's capabilities on creating a data matrix of historical LMI and a number of predictive models based on the initial setting of training parameters.

Entering the Dataset

In order to create an ANN model, it is necessary to load the dataset into the modeling tool. Importing is one method to fill in the data matrix (ODBC.DM) required to build the model.

Factors/variables displayed as columns are presented in a spreadsheet format with socio-economic data collected by the Census and Statistics Department and the IT manpower data collected by the Vocational Training Council, and each observation from 1985 to 1997 in quarterly basis is displayed as row. The intent of the data capture is to see if any of the process factors/variables and performance indicators of the data matrix can be used appropriately for the development of manpower predictive model of the IT sector.

The parent data matrix can be apportioned into training and test matrices. The dataset from 1985 to 1994 (with total number of observations N = 40) is used to train the ANN model. Other portion of parent data matrix from 1995 to 1997 (with total number of observations N = 12) is reserved for testing the accuracy of the trained model by considering the difference between measured and predicted outputs or the model error. The column (factor/variable) names of the data matrix are described in Table A.

Table A Factors/Variables of the Data Matrix (ODBC.DM)

Column (Factor/Variable) Name of the Data Matrix	Column (Factor/Variable) Description
IT/LABR	IT manpower as a % of total labour force
IT-GRW	IT manpower growth rate
IT-WTG	IT manpower wastage rate
IT-VAC	IT manpower vacancy rate
IT/ESTAB	Average No. of IT manpower per establishment
PC-GRW	Terminals/PCs/Workstations/Servers growth rate
SYS-GRW	Computer System (mainframes, mini-computers, super-micros) growth rate
NET-INST	% rate of installation with network
GDP-GRW	GDP growth rate
IMP-GRW	Imports quarterly quantum index growth rate
EXP-GRW	Domestic exports quarterly quantum index growth rate
REEXP-GR	Re-exports quarterly quantum index growth rate
TOTEXP-G	Total exports quarterly quantum index growth rate
LABR-GRW	Labour force growth rate
EMP-GRW	Total employment growth rate
UMEMPLOY	Unemployment rate
UNDEREMP	Under employment rate
MANU-EAN	Earnings growth rate by manufacturing sector
SERV-EAN	Earnings growth rate by services sector
CPI(A)GR	Consumer Price Index (A) growth rate
CPI(B)GR	Consumer Price Index (B) growth rate
CPI(C)GR	Consumer Price Index (C) growth rate
CCPI-GR	Composite Consumer Price Index growth rate
EMIG-GRW	Emigrant growth rate
TOTAL-MP	Total IT manpower requirement

Data Analysis

After the dataset has been loaded into the modeling tool, the data matrix is checked to see that only good data has been imported. Outliners, typing mistakes and scaling problems may be seen statistically or graphically as shown below.

Basic Statistics

Statistics report which gives an overall picture of the data matrix (ODBC.DM) is shown in Table B.

Table B Basic Statistics of the ODBC.DM

Factor/Variable	N	Mean	Std Dev	Minimum	Maximum	Sum Sq
IT/LABR	52	0.013154	0.004633	0.006000	0.020000	0.684000
IT-GRW	52	0.134923	0.107106	0.042000	0.371000	7.016000
IT-WTG	52	0.090058	0.045007	0.039000	0.178000	4.683000
IT-VAC	52	0.066192	0.014343	0.045000	0.086000	3.442000
IT/ESTAB	52	0.261538	0.156974	0.070000	0.590000	13.600000
PC-GRW	52	0.581308	0.543715	0.025000	2.605000	30.228000
SYS-GRW	52	0.087827	0.023062	0.062000	0.134000	4.567000
NET-INST	52	0.461500	0.175080	0.220000	0.693000	23.998000
GDP-GRW	52	0.057269	0.040625	-0.029000	0.177000	2.978000
IMP-GRW	52	0.149058	0.096678	-0.041000	0.362000	7.751000
EXP-GRW	52	0.024019	0.093322	-0.103000	0.270000	1.249000
REEXP-GR	52	0.219212	0.141061	-0.055000	0.500000	11.399000
TOTEXP-G	52	0.143808	0.095161	-0.025000	0.371000	7.478000
LABR-GRW	52	0.016404	0.015731	-0.015000	0.059000	0.853000
EMP-GRW	52	0.017769	0.016794	-0.012000	0.062000	0.924000
UNEMPLOY	52	0.022500	0.006160	0.013000	0.035000	1.170000
UNDEREMP	52	0.014212	0.005207	0.006000	0.025000	0.739000
MANU-EAN	52	0.038481	0.036497	-0.057000	0.135000	2.001000
SERV-EAN	52	0.044481	0.024125	-0.020000	0.088000	2.313000
CPI(A)GR	52	0.074885	0.026806	0.025000	0.131000	3.894000
CPI(B)GR	52	0.075962	0.025667	0.029000	0.124000	3.950000
CPI(C)GR	52	0.083538	0.024770	0.034000	0.122000	4.344000
CCPI-GR	52	0.077500	0.025461	0.031000	0.123000	4.030000
EMIG-GRW	52	0.077788	0.230971	-0.300000	0.579000	4.045000
TOTAL-MP	52	25620.750	12186.646	9378.0000	44847.000	1332279.0

Model Building

In order to derive an appropriate ANN model for the IT manpower forecast, it is necessary to study a number of trained ANN models using different number of hidden neurons from 1 to 9. Other initial parameters controlling the way on how the modeling tool trained on the pattern data are set up as follows:

Max Hidden:	(from 1 to 19)	Learning Rate:	0.75	Seed: 15
Eon:	100	HLearning Rate:	0.75	
Max Training:	200,000	TLearning Rate	0.75	
Hidden Freeze:	0.75	IO Learning Rate	0.75	
Error Tolerance:	1.e-003	Alpha:	0.8	
Good RSQ:	0.9999	Theta:	0.5	
Sign Inc:	5.e-002	Random Fact:	0.5	
Tolerance:	5.e-002	Auto Save:	1,000	

Models Analysis

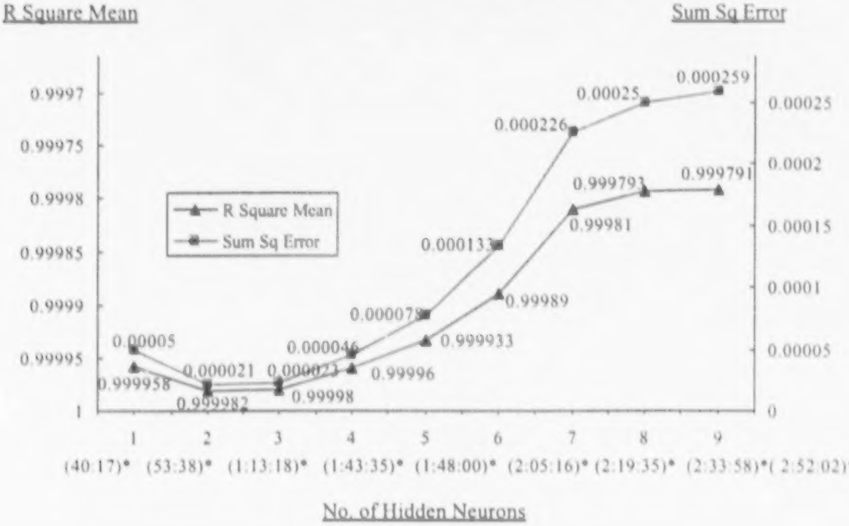
The application of the modeling tool provides two basic methods for analyzing trained models. The first is a numerical or statistical method and the second is a graphical method. Both of these methods can be used on either the training matrix or the test matrix. Also, additional test matrices can easily be imported for analyzing long-term performance.

ANN models have been created and trained on the basis of automatic increment of hidden neurons (by setting the maximum number of hidden neurons from 1 to 9). In this respect, it is necessary to find out the performance of each of these ANN models by including or excluding factors/variables from the input list of the model based on prior knowledge. The performance of all these ANN models are validated by checking the predicted outputs statistically and graphically as shown in the following experimental results:

Result I - Models Performance Analysis based on the Number of Hidden Neurons

Figure B below shows the performance analysis of 9 well-trained NN models. All these models each have the R square mean close to 1.0 and the sum square error close to zero. It is observed that the hidden neuron's learning rate decreases when adding a new neuron in the Automatic Increment training algorithm. This results in the increase of training time in accordance with the addition of hidden neurons as shown in figures in brackets.

Figure B Models Performance Analysis based on Number of Hidden Neurons



* Figures in brackets denote the time taken in hh:mm:ss to train the neural models after 200,000 times the training matrix has been presented before ending the training.

In comparison, it is observed that the model with 2 hidden neurons (with sum square error of 0.000021 and R square mean of 0.999982) performed better than the other models. In order to improve the performance of the ANN model with 2 hidden neurons for projecting IT manpower requirement, further analysis of its factors/variables for inclusion into the input list of the model is essential.

Result II - Sensitivity Analysis of the Output of the Trained Model (with 2 Hidden Neurons) on the Training and Test Matrices

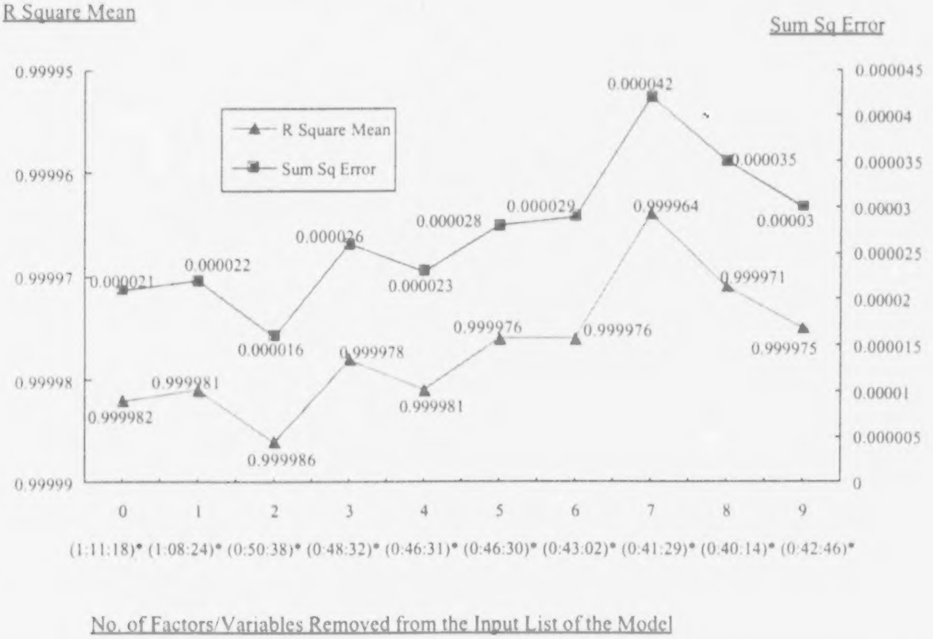
A sensitivity analysis is run to see which factors/variables account for most of the variability of total IT manpower requirement (TOTAL-MP) of the trained model with 2 hidden neurons on the training and test matrices. The result is ranked in order with factors/variables of the most effect at the top of the list as shown in Table C.

Table C Sensitivity Analysis of the Output (TOTAL-MP) of the Trained Model with 2 Hidden Neurons on the Training and Test Matrices

Variable Name	AveAbs Sens	Ave Sens	Peak Sens
NET-INST	0.18175	+0.18175	+0.08609
IT-WTG	0.18055	-0.18055	+0.08944
SYS-GRW	0.09439	-0.09439	+0.03850
IT-VAC	0.07946	+0.07946	+0.04372
CPI(B)GR	0.06373	+0.06373	+0.03104
CCPI-GR	0.05160	-0.05160	+0.03065
CPI(C)GR	0.04370	+0.04022	+0.03096
IT/LABR	0.03570	+0.03570	+0.01722
CPI(A)GR	0.03529	-0.03527	+0.02433
EMIG-GRW	0.03246	-0.03246	+0.02093
IT-GRW	0.02958	+0.02958	+0.01631
REEXP-GR	0.02605	-0.02589	+0.01792
GDP-GRW	0.02274	-0.02207	+0.01392
EMP-GRW	0.02226	-0.02226	+0.01152
EXP-GRW	0.01544	+0.00868	+0.01081
PC-GRW	0.01239	+0.01193	+0.00795
SERV-EAN	0.01218	-0.01218	+0.00698
LABR-GRW	0.01122	+0.01122	+0.00586
IMP-GRW	0.01089	+0.00346	+0.00820
MANU-EAN	0.01002	+0.00990	+0.00630
UNDEREMP	0.00887	-0.00283	+0.00739
TOTEXP-G	0.00771	+0.00754	+0.00667
IT/ESTAB	0.00743	+0.00387	+0.00649
UNEMPLOY	0.00460	-0.00460	+0.00219

In order to pick the best factors/variables for inclusion into the input list of the model with 2 hidden neurons, the last 9 factors/variables of the sensitivity analysis report are each removed one by one from the input list to form different models for further training and analysis. The performance of these 9 trained ANN models based on various input factors/variables on the training matrix is shown in Figure D.

Figure D **Models Performance (with 2 Hidden Neurons) based on Various Input Factors/Variables on the Training Matrix**



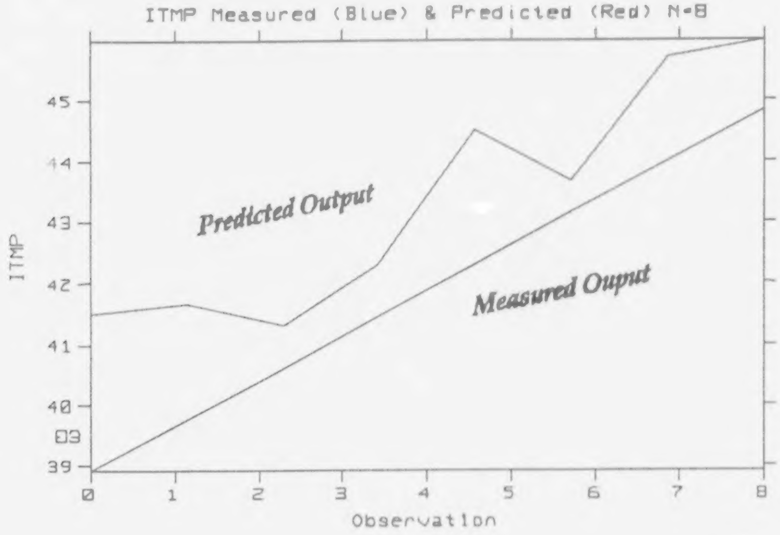
* Figures in brackets denote the time taken in hh:mm:ss to train the neural models after 200,000 times the training matrix has been presented before ending the training.

The resulting graphical display enable us to quickly determine how well all these trained models performed on the training matrix. It is observed that these trained models each have the sum square error close to zero and the R square mean statistic larger than 0.9999 (near 1.0) of the good RSQ training parameter. Among these, model with 2 factors/variables (i.e. IT/ESTAB and UNDEREMP) removed from the input list performed the best (with R square mean 0.999986 and sum square error 0.000016). It is also observed that in general the time taken to train each model is inversely proportional to the number of factors/variables removed from the input list of the model.

Result III – Keep Best ANN Model During Training

Sometimes the best model of a particular process develops somewhere between the first few seconds of training and the maximum epoch allowed. The modeling tool can keep this intermediate model developed during the training session as the final model by selecting either the mean square error or R square as the measurement. A measured and predicted graph with best performance on the test matrix is shown in Figure E.

Figure E **Measured and Predicted Outputs of the Model (with 2 Hidden Neurons) on the Test Matrix having 2 Factors/Variables Removed**



CONCLUSION

Findings of the Project

Feed forward neural networks with a single hidden layer are statistically consistent estimators of arbitrary measurable, regression functions under certain practically-satisfactorily assumptions regarding target noise, number of hidden units, size of weights, and form of hidden-unit activation function (White, 1990). Unfortunately, the above consistent results depend on one impractical assumption that the networks are trained by an error minimization technique that comes arbitrarily close to the global minimum. Such minimization is computationally intractable except in small or simple problems (Judd, 1990).

ANNs do provide powerful predictive models and theoretically are more general than other data mining and standard statistical techniques. In practice, however, the gains in accuracy over other techniques are often quite small and can be dwarfed by some of the costs because of careless construction or use of the model by non-experts.

Further Development of the ANN Model

When standard neural networks are used to solve problem in projecting IT manpower requirement which relied on complex labour market information, the deficiency of the network architectures become apparent. (i.e. Brute-force learning is time-consuming and the performance is usually poor.) It is suggested that if the problem is sufficiently partitioned by job level (such as IT management, systems development and operative), standard neural networks can be used as building blocks (or functional units) in the construction of a more complicated neural structure. Each of these functional units is responsible for solving a portion of the problem by job level. This, of course, will ease the learning process and improve the accuracy of the functional units. On the other hand, the partitioning scheme depends very much on the designer's knowledge of the problem concerned. These include identified appropriate learning factors/variables by job level for each of the corresponding functional units. Once such scheme is identified, the resulting neural network would consist of an intelligence that is in-built by the designer, and the output of each functional unit would aggregate to form the total IT manpower requirement. This is the core idea of neural intelligence.

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TRAINING FOR BETTERMENT: A MODEL FOR TRAINING OF PROFESSIONALS IN A DIVERSE ORGANISATION

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Abstract: Staff development is one of the pillars of organisational advancement. A well-trained employee has the capacity to increase the organisational output and improve his/her individual social capacity. The conventional method of staff development trains each tier of decision-makers for their particular skill needs. The problem with this model is that capital gain and financial results might be the only mutual outcome of these training.

The proposed model sees the staff as individuals who might have similar needs and interests towards certain philosophical and cultural views holding the organisation together. The model, already in practice in one of the Pacific Island countries, shows how one might find a common interest in the organisation and how the staff might be trained within the parameter of this undertaking.

INTRODUCTION

The structure of the organisation is a guide to define the work practice, allocate duties and coordinate work. The structure helps to understand the division of the labour, how decision making being made and how the communication between the players take place.

Organisational structure usually take the various shapes but they are generally look like a pyramid with many workers at the lower levels, fewer at the middle and still a fewer one at the top. Decision making and communication channels are indicated by the structure, showing who makes decisions, who will carry out these decisions and how these decisions are communicated to various levels of the organisation. However the height of the organisation and level of hierarchy is not uniform in all organisations. There are those which might become flat as the result of less number of operational levels and those with multiple operations that make up the tall organisation.

In summary organisational structure indicates the level of function and the communication process in which an organisation operates. In all, the process of decision making is generally at the top level with a few organisations having their decision made at bottom of the ladder.

Staff Development

Staff development is one of the pillars of organisational advancement. The impetus for an organisational success, might be argued, depends on the skills and know how of the workforce. A well trained workforce not only has the capacity to increase the organisational output, at least in a short term, but increases social benefit at both individual and community levels. For organisations to succeed a great deal of inputs, financial or otherwise, are invested in the setting up and conducting staff development programmes.

Approaches to the staff development in many organisations has been geared towards training of each tier of decision-makers in their particular job related skill and needs. This traditional and conventional practice treats the development of individuals as separate from the development of the organisation in which they work (Darling-Hammond, 1990). The top managers receive their training in areas of organisational re-structuring, management skills and similar topics. Down the ladder the next tier is trained in means and ways of managing various departments and finally those dealing with the day to day contacts with the public are taught how to deal and satisfy customers demands on their routine and daily customer relationships. The problem with this model is that beside the outcome such as capital gain and financial results there are hardly any other common interest resulting from these capacity buildings. Furthermore, the staff development service has little or no involvement of the clients and those who will be the recipient of these training. In many of these development programmes, staff are asked to reflect on aspects of their work for a better understanding of the individual worker leading towards future efforts which might be handled more effectively. Although such approach might be proven to be effective in individual learning (Warren-Little, 1990) it is still questionable where they are sufficient in improving organisational development and interest (Wood, Thompson, & Russell, 1981).

Clearly what is needed then is a model of staff development which not only facilitate individual learning and improvement of quality of individual work practices but one which support and facilitates organisational development at the same time. Such a model of staff development will need to go beyond transmission and development of staff know how to a model of mutual and shared visions and common interest.

The process

The process starts with engaging all stakeholders in defining organisational needs, beyond personal interest and individual work practices. This means a need assessment, searching for organisational vision, within the context of organisational overall vision, goals and mission. Beyond this point is turning these common understudying and visions into a staff development policy that encourages common interests and mutual vision and interests. Such an action plan looks at individual staff at micro level and assists them to develop the knowledge and skills necessary to excel in their work and designated tasks. It also insist in development of staff activities towards group work and team building by drawing upon the individual and collective vision of staff at meso level. Finally the plan will assist the organisation to develop a strong and coherent framework to support and encourage the realisation of the mutual vision at macro level (Marshall, SJ, 1998).

The Case Study

Yooroang Garang: School of Indigenous Health Studies was invited to develop "...a fully costed plan...for the development of the Information, Education, and Communication [IEC] Unit" [later Solomon Islands Centre for Health Promotion {SIHPC}] by the Human Development Sector Unit-East Asia and Pacific Region of the World Bank in late June 1999.. The final Action Plan was to be implemented in two provinces of Makira and Guadalacanal (Clapham, 1999, p.1).

Three members of the Yooroang Garang visited Solomon Islands in the first week of June 1999. The team started the task by visiting, discussing and interviewing relevant personnel throughout their stay in Solomon Islands. Such needs assessment was followed by one of the team members visit to a community health centre; interviewing members of Malaria, Maternity Care and STD team, discussing the needs of the unit with Non-Government Organisation [NGO] management and attended a one day NGO seminar in Honiara. Ministry of Health and Medical Services [MHMS] and World Health Organisation (WHO) in Solomon Islands provided the team with valuable information, data, reports and necessary documents.

A preliminary analysis of the current situation in Solomon Islands health system indicated a number of important factors, which undermines the ability of health care in Solomon Islands (Clapham, KhavarpOour, Gelonesi, 1999). Shortage of trained health personnel, shortage of medical equipment, high population growth and financial strains are a few highlighted in the review of health system in 1996 (Solomon Islands Ministry of Health and Medical Services, 1996). But a vibrant and engaging system of collaboration was evident and is still functioning in many parts of the organisations in the Solomon Islands. The presence of a large contingency of Non Government Organisations [NGO's] and similar institutions in the islands indicated a high level of activities among these groups. From the interviews and discussions with various groups it was evident that collaboration and engagement in mutual goals and objectives were also taking place at national, provincial and local levels. These were the strength of the Solomon Islands community that needed nurturing and developing.

To engage in this community building process the development of "horizontal" rather than the "vertical" ties between the government institutions, NGOs at local, state and national level was paramount to the success of any initiative, health or otherwise. However, these engagements needed to be focused and directed towards mutual interests and outcomes. Participation in these mutual engagements, and in this particular case those engaged in health promotion initiatives, required specific skills and training, which were missing at many levels.

Such specific need which was mutually recognised by all at various levels, was the health promotion (see Figure 1). However, the needs of each level for health promotion training varied as their responsibilities differed. The top-level decision-makers required training in the meaning and concept of health promotion. The second tier of decision-makers were more in need of learning how collaborative efforts might influence health promotional activities at local levels. The workers, at lower level of decision making, had interest in developing skills in designing health promotion programmes, implementing them in earnest and evaluate the outcome. Based on these findings and using Bloom's The Cognitive Domain Taxonomy of Educational Objectives a Plan of Action was initiated (Bloom, 1956).

The Outcome

The Plan has now moved to implementation stage. After receiving conformation from the World Bank and Solomon Islands' Ministry of Health and Medical Services for the Plan and allocation of funding a number of development has taken place.

The training of the 2nd tier staff is now under way. Three of the staff from the new SIHPC are now attending Yooroang Garang programmes, one at undergraduate and the other two at postgraduate levels. Their curriculums are geared towards reorganisation and restructuring of the SIHPC. In addition to the foreshadowed training in policy development [see Figure 1] they are looking into areas of programme development and strategic planning.

Funds are now made available by the University of Sydney's International Development Fund to train 3-4 of the top management and Head of the NGO's [1st tier] to attend a three days workshop at Yooroang Garang in November-December 2000.

Meanwhile, the 3rd tier training needs will be served through various training, arranged by the three students attending classes at Yooroang Garang.

Figure 1

Developing staffs' individual and organisational needs

Bloom's Concepts	Meaning	Who	Application/training needs
Evaluation	• Judgments on values and purposes	**1st tier** • Top General Managers • Department Heads • Head of the NGO organisations • Solon Islands Centre for Health Promotion team	• To approve health promotion policies, • To approve funding for health promotion activities.
Synthesis Analysis	• Ability to put together elements/parts to form a whole • Ability to breakdown elements/parts to understand the relationships	**2nd tier** • Managers • Team leaders • NGO representatives • HEO's at Malaria, Maternal care and, STD	• To develop policies in health promotion • To advocate health promotion policies
Application Comprehension Knowledge	• Ability to use abstracts in concrete situations • Ability to recall methods/processes • Ability to recall patterns	**3rd tier** • Local HEO's at provincial level • Staff working/involved in health promotion activities	• To design, implement and evaluate health promotion programmes

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E-LEARNING IN KNOWLEDGE-BASED SOCIETY

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Index Words: E-Learning, Internet, Edutainment, New Learning Paradigm, Knowledge-based Society, (CLC) Continuous Learning Centre.

Abstract: The new training technologies can help improve the quality of the teaching and learning process, reduce training time and costs and compensate for the lack of training opportunities. One of the most prominent technologies is the development of Internet - leading to the development of e-learning. In the knowledge-based society, training stresses on individual learning and innovation to meet the restructuring of the industry. The Continuous Learning Centre (CLC) has demonstrated the success of the Internet learning and has been a pioneer in this area in Hong Kong. The experience and future development of CLC will be shared in this paper.

Knowledge-based Society

Evolution of economy

1. The evolution of economy from the dominance of Agriculture to Industry and to Information has developed social values and created wealth for human being. In the past, career relevant education starts with first formal academic degree and last until or beyond retirement. Nowadays, the rapid change in both employment patterns and society has made undergraduate education seem less important in the span of working life while Continuous Learning has become increasingly important. The future lives in a knowledge-based economy in which the amount of knowledge and our capacity to store and retrieve it is ever increasing, but the period for which particular pieces of knowledge are relevant or valuable is decreasing. Continuous Learning is partly an answer to the knowledge explosion, but even more as a facilitator of career change as old industries diminish and new ones grow. Continuous Learning is the necessary part in maintaining the growth and making progress in society. It should be in a form of systematic maintenance, improvement and broadening of relevant knowledge and skills. The development of these qualities is necessary for the successful carrying out of professional duties throughout a career. The Continuous Learning includes any activity that extends or updates knowledge, skill and judgement and enables knowledge workers to be more productive, understand and apply advances in technology, face changes in career direction and better serve the community.

New Challenges of Learning

2. Training is used to emphasize on mass teaching of production skills, which meets the needs of the high growth of industry in the past. Nowadays training stresses on individual learning and innovation to meet the restructuring of the industry. The paradigm of education shifts not only from skills to innovation, but also in many dimensions such as, from passive to active, from one way to interactive, from mass to individual, from standardized to diversified etc. On top of these, people would prefer to learn anytime anywhere convenient to them.

3. Companies and ogranisations must continuously and quickly train and update the skills of their employees to keep pace with the changes in the knowledge-based society. Traditional classroom training methods simply cannot keep up with the vastly increased speed and flexibility needed to meet training and education requirements for businesses running on Internet Time. Classroom training is expensive and organisations are under pressure to lower training costs by more efficiently delivering training.

New technologies used for learning

4. In the fast changing world, the intelligent use of new technologies plays a vital role in providing knowledge and skills to re-train and upgrade workforce so that they can adapt to evolving job opportunities and economic restructuring. The new training technologies can help improve the quality of the teaching and learning process, reduce training time and costs and compensate for the lack of training opportunities. One of the most prominent technologies is the development of Internet in recent years. Indeed the Internet is contributing to major transformations in the way people live, learn, work and interact around the world. Virtual workplace, virtual classroom, virtual library, virtual school and virtual community are becoming more pervasive.

5. In order to compensate the lack of training opportunities, one example is to make use of the satellite to broadcast the training to classrooms over the world. However, satellite broadcast is only one way. To complete the loop of interactivity, Internet can be used to send questions and video motion from each classroom equipped with Internet and camera. In turn, the questions asked be broadcast to every classroom through satellite so that every trainee knows who and what the questions asked.

E-learning

Definition of E-learning

6. E-learning provides and education opportunities that remove time, place and situational barriers. It can assume many forms but they all have common thread : the physical separation between a student and an instructor for most cases. E-learning is a knowledge and information infrastructure that leverages the power of the Internet to provide timely, effective training and education in an increasingly fast-paced and rapidly changing world. E-learning includes content delivery in multiple formats, management of the learning experience, and a networked community of learners, content developers and experts. It provides faster learning at reduced costs, increased access to learning, and clear accountability for all participants in the learning process.

Why e-learning

7. The driving forces of e-learning are many. First, more and more work can be done from home with PC and Internet links. According to the survey, about 30% of the companies in USA are set up at home. The figure is growing continuously. Second, people spend less time in travelling to attend class. They can do the learning anywhere. Third, Enterprises need to increase training opportunities to their employees while maintaining cost control. Fourth, the pace of innovation will be very rapid in the information world. Fifth, the business world is ever speeding up which requires rapidly transfer of knowledge and update skills. Sixth, the web server centralizes all contents of training titles, which are easily updated, customized and maintained. Seventh, the life long learning is becoming part of the life which is leading to a great demand in training and learning and eight,

traditional training class is too slow and cannot meet the overall demands in training. Lastly, Internet provide learning anywhere anytime. These driving forces unleash the e-learning.

8. In 1996, Internet training occupied less than 10% of total training requirements while Instructor-leaded training took up 80% of the pie. In 2000, it is forecast that Internet training and Instructor-leaded training takes 35% and 55% respectively. By 2002, traditional classroom training and e-training share equal training opportunities. According to Aberdeen Group study on e-learning in the enterprise, November 1999, already, more than 70% of corporations offer their employees computer or web-based training options. And 60% of institutions of higher education now offer online learning courses. Within a few years, that number should increase to 90% in corporate government, higher education settings. Tremendous growth is expected in the future of knowledge-based society.

Cons of e-learning

9. The increase in the popularity of e-learning in many corporations, governments, and higher education institutions are due to the fact that e-learning can be highly effective at teaching at much lower cost than traditional training. Technology cost decreases, high travel costs, flexibility are driving e-learning to proliferate. However, every coin has two sides. The drawbacks of e-learning include extra workload, lessened personal life, a lot of struggles, web limitation and high production cost.

Extra workload

10. Many instructors find E-learning courses often take more time to prepare and deliver than traditional classes. The extra workload is often not accompanied by any compensation. While this is being done on the good will of the instructor, that's not a solid foundation. Apart from all the IT/WEB/Multimedia skills to be grasped, one of the biggest parts of the work is the e-mail with students. In the classroom, there might be four or five eager students asking the questions. With an online course, there often are responses and questions almost from all students. For both the instructor and students, an online course is writing-intensive. All the coursework and feedback is given to students online. In a recent NEA survey (National Education Association of the United States – USA's largest teachers' union), 53% of the participants said on-line learning courses take more time to prepare for and deliver than traditional classes. 83% of the participants said they contact their students at least once a week by e-mail, and often communicate more frequently than that. All these take more time than traditional classes.

Probably one's personal life would be lessened

11. For the learner, perhaps the ultimate goal of lifetime learning is to improve one's quality of life. The anytime, anywhere nature of enterprise e-learning however blurs the line between work and after work. Though corporate competency could be increased by its employees' learning effort, probably one's leisure or personal life would be lessened.

Until its maturity, a lot of struggles and efforts

12. Technology is not a panacea and can only improve and increase learning when applied to meet specific educational goals and objectives. One key is to focus the use of technology on clear outcomes rather than allowing the tools of computers and Internet to become the ends. It takes time

to figuring out how to incorporate the technology into goal specific learning. E-learning is still in its evolution phase. Until its maturity, a lot of struggles and efforts would be needed.

The WEB limitation

13. The Internet today is slow and no speeds guarantee. PC is not reliable and the WEB is even more unreliable. One would find himself totally lost if the learning was disrupted by broken link or computer hang. On-line virtual classrooms with real-time audio and video could be very time wasting and frustrating if the learning was disrupted. Even for non-real-time self-paced learning that could tolerate the net, a lot of time could be wasted solely on waiting for information transferring through the net. Putting the learning materials on a CD ROM is often much better than delivering through the WEB.

High Production cost of courseware

14. The production of courseware requires both the skills of IT and the knowledge of the subject to be delivered. It is not easy to find such person especially the IT workforce is shortage. The cost of making such courseware is high yet the contents are not necessary effective and meeting the learning objectives.

Comparison of classroom and e-learning

15. Although the traditional classroom method is in many ways still the best way to train employees, it is generally slower than technological change. Although e-learning solutions allow enterprises to cut costs and improve training services for employees, and staff gain access to the latest training materials at their desktops when they need them, it is generally lack of interaction (face to face) and self motivation. In summary, the comparison of classroom and e-learning is tabulated as follows.

	Classroom	E-learning
Size of audience	Limited size of audience. Constrained by the training place	No limit of audience size. Increase training opportunities
Travel – overhead of training	Congregate trainer and students in one location. Expensive due to travel and lost opportunity costs	Virtual learning delivery eliminates travel expenses and minimizes lost opportunity costs
Flexibility	Constrain classroom and fixed time	Any where, anytime
Cost	High unit cost	High setup cost, low unit cost
Different level of trainees	Trainees are of different level of knowledge which impose difficulty in teaching	Trainees study the e-learning on their own pace
Access of experts	Difficult or expensive to get access to experts	Easy access to experts
Training contents	Generalised training	Personalized learning curricula
Fast pace	Difficult to keep training up to date	Rapid deployment and continuous evolution
Training on demand	Trainees are expected to absorb large quantities of information whether or not all information is relevant	Just-in-time modular training providing only necessary information
Interaction	Real life interaction (face to face) promote learning	Virtual interaction may not be attractive
Motivation	Trainer and class team motivate learning	Need self motivation which may end up with excuse of no time for training
Learning behaviour	Everybody gets used to classroom training	Need time to get accustom to e-learning

The operation of CLC

Establishment of CLC

16. The CLC was approved a grant of HK$3,202,000 for 3 years from July 1997 to July 2000 under the Industrial Support Fund (ISF) of Industrial Department. It is set up by the EDTTC in collaboration with the Electronic Engineering Department of the Hong Kong Technical College (Chai Wan) and Electrical & Communications Engineering department of the Technical College (Tsing Yi). The Centre was launch at 2 December 1998 and it was operated very successfully in the past years. The income of the CLC up to 15 July 2000 exceeds the original budget by 75%. The CLC is not only self financed but will continue to grow in the years to come.

Services of CLC

17. The Continuous Learning Centre offers 4 types of service. First, the course materials of the Electronic Design Technology Training can be accessed on the Web. Second, the Centre is equipped with interface software to realize CAD anywhere anytime on the Internet. The CAD service over Internet is the first of its kind offered in Hong Kong. It greatly improves the flexibility and convenience of practical learning such as real-time simulation. Third, the CLC provides interactive training courses with embedded tests on the Internet. Fourth, it provides library services of borrowing computer-based training and titles, which can be made reservation over the Internet. The establishment of the CLC is timely and rides on the wave of e-learning – Internet enabled

learning. By eliminating barriers of time, distance, and socio-economic status, individuals can now take charge of their own lifelong learning.

Combined Classroom and Internet Training

18. The Internet-based training provides knowledge in introductory level. Trainees acquire new concepts of new knowledge on his/her own pace. However, they may not easily master the know-how and application of knowledge through self-study. Classroom, group or mentor training with discussion and hands-on would compliment the Internet training to build up the in-depth skills and knowledge. Since Internet training is on self-pace, it brings trainees to the same level of basic knowledge before attending the class. Trainers immediately find that the audience are at similar level of knowledge, which allows them to conduct the class efficiently. The Internet training allows unlimited user access and reduces the cost of training per user. The classroom training could then concentrate on hands-on exercise, laboratory experiment, key point discussion, problem solving and professional examination preparation. The learning behaviour of the workforce nowadays may not get used to the learning through computer and always lack of motivation. Classroom training not only drives the trainees to study on Internet before coming to the class but also synchronise the learning progress. The e-learning and classroom training are of synergy with each other.

19. Because of the compliment advantages, the combined Internet and Classroom training is expected to be developed as one of the main stream of learning mode in the future. The iMCSE course launched by the Continuous Learning Centre of Vocational Training Council is the first of its kind in Hong Kong. It demonstrates both advantages of the Internet and Classroom training, which received encouraging response in the society.

20. The CLC established by the Vocational Training Council has demonstrated the success of the e-learning and has been leading the training industry in Hong Kong. Its four services of learning attract many engineers and technical supporting staff to participate in cyber training. The CLC is indeed riding on the wave of e-learning and its future development is full of opportunities.

Future Development

Opportunities of e-learning

21. In the knowledge-based society, as the demand of knowledge and training is ever increasing. It is forecast that the e-learning and business opportunities in development of e-learning will grow tremendously in the years to come. The CEO of Cisco Systems, John Chambers, declared in a 16 November 1999 keynote address to COMDEX that e-Commerce exploded over the past two years, the stage is now set for e-learning to become the second wave in Internet-based applications. According to a recent Merrill Lynch report, the education and training industry is a $706 billion market. The curriculum materials and certification segments of this market total $21 billion. These figures are for the United States only, but industry leaders expect the rush to prepare students for the Internet to be a worldwide phenomenon.

Future development of CLC

22. In today's fast-paced culture, organizations which implement e-learning will provide their work force with the ability to turn change and knowledge into an advantage and competitive edge. The next move of the CLC is to provide training to companies in setting up a company-wide e-learning infrastructure and in skills for creating e-learning component contents which are part of the value chain of a company's business.

CONCLUSION

23. The increase in the popularity of e-learning in many corporations, governments, and higher education institutions are due to the fact that e-learning can be highly effective at teaching at much lower cost than traditional training. Technology cost decreases, high travel costs, flexibility are driving e-learning to proliferate. However, the drawbacks of e-learning include extra workload, lessened personal life, a lot of struggles, web limitation and high production cost. The CLC has demonstrated the success of the e-learning with its four services. The future development of e-learning is full of opportunities.

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THE DEVELOPMENT OF A MANAGEMENT COMPETENCY MODEL AND A DEVELOPMENT CENTRE

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Index: Management Competency Model, Development Centre

Abstract: In 1999, the Hong Kong Productivity Council (HKPC) has developed a Hong Kong focused Management Competency Model and a Development Centre which aimed to improve the organisation's capability to develop managers for general management roles. The project began with the development of the Management Competency Model which formed the foundation of the Development Centre. The research process included surveys and focus group meetings. The Management Competency Model comprised 31 competencies grouped under 8 clusters. The assessment tools adequately measuring the competencies identified in the Model included personality questionnaire, 360 degree assessment exercise, group discussion on business case, role play, presentation, and interview.

INTRODUCTION

In 1999, the Hong Kong Productivity Council (HKPC) embarked on a research project in partnership with the Richard Ivey School of Business of the University of Western Ontario to develop a Management Competency Model and a Development Centre. The aim was to strengthen the human resources foundation of local businesses by improving the ability of companies to develop managers for general management roles.

OVERVIEW OF A DEVELOPMENT CENTRE

The purpose of a Development Centre is to measure the behaviour of a person in a structured way, enabling assessors to assess how competent the person is at present, or more usually, to predict the person's future behaviour. The Development Centre makes use of a multiple assessment approach with a multiple number of job-related exercises and activities by a multiple number of assessors on a multiple number of participants. It is designed to help participants learn more about themselves and can be used as a tool for team building and development of skill that will be called on in the future. With the incorporation of coaching and counselling sessions into the programme, they help develop people during the course of the Development Centre.

COMPETENCIES AS FOUNDATION OF THE DESIGN OF THE DEVELOPMENT CENTRE

In the context of designing a Development Centre, the start point is a clear and accurate picture of what the Centre is measuring so that participants are evaluated against appropriate criteria and the exercises are designed in a way that can accurately classify and evaluate behaviour. Therefore, competencies which are concerned with behaviour, attitudes, or skills, form the foundation of the design process.

RESEARCH PROCESS

The research began with the development of the Management Competency Model which was a multi-stage process described below:

In order to determine the competencies required, job analysis need to be carried out. The structure of a typical job analysis can vary, e.g. direct observation, interviews, critical incident technique, repertory grid analysis and questionnaires. In the case of this research project, behavioural questionnaires were adopted since interview with sufficient number of incumbents to obtain a representative sample of their views seemed impossible.

Before launching a survey to identify the core competencies required for successful performance, HKPC gathered the competencies associated with high performance from a number of sources. These included research from the Richard Ivey School of Business, HKPC, and the Human Resources managers from 14 sponsoring organisations, representing diverse industries from the private and public sector.

These competencies were consolidated and distilled into a list of 65 competencies and conceptually grouped into 12 dimensions. Altogether, 400 surveys were sent to the 14 participating organisations' Human Resources Managers and Line Managers on the relative importance of each of these 65 competencies to successful performance now and in the next 3 to 5 years. Survey respondents were middle to upper middle managers and their direct superiors. The aim was to produce a competency model that focused on the core competencies required for middle to upper middle managers with a general management responsibility.

Based on some data analysis, we generated a list of top 30 critical competencies. A number of focus group meetings were then held with the Human Resources Managers of the participating companies to review and validate the results. The outcome was that all the focus groups produced very similar lists.

FINDINGS - A MANAGEMENT COMPETENCY MODEL

Based on the above process, a Hong Kong specific competency model as shown in Table 1 was developed. It defined the critical competencies, skills and behaviours necessary for outstanding performance in general management roles in light of Hong Kong's unique future business challenges.

Table 1 The Management Competency Model

Menu	Cluster	Competency
Main	*1. Leadership*	▪ Change leadership ▪ Directing ▪ Decision delegation ▪ Communication ▪ Job enrichment ▪ Change management ▪ Teamwork and cooperation ▪ Team sharing and learning ▪ Visioning
	2. Customer / Market Focus	▪ Customer / market focus
	3. Decision Making	▪ Decision making ▪ Decisiveness
	4. Intellectual Processing	▪ Analytical thinking ▪ Creative thinking ▪ Problem solving
	5. Planningand coordinating	▪ Coordinating ▪ Short-term planning ▪ Strategic planning ▪ Project management
Supplementary	*6. Performance Management*	▪ Goal setting ▪ Performance assessment ▪ Developmental feedback
	7. Knowledge	▪ Expertise management and development ▪ Organizational awareness ▪ Product / market sense ▪ Financial concern
	8. Personality Orientation	▪ Achievement drive ▪ Adaptability ▪ Quality concern ▪ Perseverance ▪ Crisis management

The model comprised 31 competencies grouped under 8 clusters. These 8 clusters were further classified into 2 menus, i.e. a main menu consisting of 5 dimensions which all managers coming to the Centre should be evaluated on; and a supplementary menu consisting of another 3 dimensions considered as supplementary qualities which allow companies to assess, if a company wanted additional dimensions to be evaluated. The premise for separating "main" and "supplementary" menus was that there could only be a limited number of dimensions that can be reasonably assessed.

DESIGN OF THE DEVELOPMENT CENTRE

The content of a Development Centre consisted of a set of simulation exercises supplemented by various other ingredients such as interviews and psychometrics. In designing the Centre and selecting the exercises, we have considered a number of issues. For instance, the exercises selected should be of relevance to the job; the mix of exercises should be appropriate so that sufficient emphasis was given to the most important competencies; and the number of exercises should be minimised but was adequate to provide valid and reliable data due to time and resources constraints.

In order to gather the possible exercises which measured the competencies of the Management Competency model, a project team was formed. The first draft of a Competency - Exercise Matrix was produced. Then, the project team has conducted a trial run of the exercises in order to first, gauge whether the exercises were set a the right level of difficulty; second, assess whether the exercises were relevant; and third, check the timing of the exercises. After the trial, some of the exercises were edited, deleted and customised in some way. As a result, the Competency - Exercise Matrix was modified. The assessment tools included personality questionnaire, 360 degree assessment exercise, group discussion on business case, role play, presentation, and interview.

By using multiple assessment tools and exercises in the Development Centre, companies could evaluate employees' competencies. The results from the Centre not only allowed companies to make accurate management decisions about development of staff, but also promotion and succession planning.

With this Hong Kong focused competency model, the capability of Hong Kong companies to develop managers from general management roles was improved.

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GRAPH THEORY, JOB-LABOUR SYSTEM AND MANPOWER PLANNING

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Keywords: Community, manpower system, job-labour system, graph, directed graph, electric circuit analogy, flow, storage, flow allocation factor, flow between labour groups, vocational education and training, manpower planning.

Abstract: People working in a community can be grouped into clusters of varying education/training background. Flowing of workers between groups is evident, with movement starting from birth and ending to death. Graph theory is applied to denote the system. Analogy to an electric circuit is referred for quick over-viewing and solution. Figures for manpower planning are predicted.

INTRODUCTION

The administration of a community has the commitment to plan the education and training for providing quality workers to various positions in government and business organisations. The manpower resources of a community can be treated as a system. This system has certain behaviours and can be represented as a "directed graph". With application of graph theory, solution to the flowing between groups of personnels can be found. Based on the solution, manpower planning of a community would be readily handled.

1. Grouping of Manpower

Manpower of a community can be divided into the following groups:

(A) Child (age 14 and below), they are non-workers.

(B) Labour (with threshold of education).

(C) Operator, or Machine Operators (with threshold of education and training)

(D) Craftsman (Operators plus three years of craft training)

(E) Clerk (with threshold of education plus three years of Senior Middle School)

(F) Technician (completed Senior Middle School and four years Tertiary Education), or Associate Professional as it is sometimes called.

(G) Professional (completed Tertiary Education and obtained Professional Qualification)

(H) Manager (with experience of work and ability to manage people for achieving goals)

(I) Retired

2. A Hypothetical Vocational Education System for a Community

It is assumed that a community has a system to teach people to attain the required education and training for the need of the community. We may call it "Education and Training System". This system may include the following:

(a) Everyone in the community is to have a nine-year-long compulsory education. This is called "threshold of education".

(b) People with "threshold of education" are grouped in (b). These people can work as "elementary workers" or "labours".

(c) Those attained "threshold of education" may go through a three-year-long "Senior Middle School Education" to achieve the qualification of a "clerk". A "clerk" is grouped in (c).

(d) Any "clerk" may go through a four year long "Tertiary Education" to achieve the qualification of a "technician". A "technician" is grouped in (d).

(e) Technicians can gain professional experience to become "professionals". A "professional" is grouped in (e).

(f) Any "labour" after a specific training of one tenth of a year can be employed as "operator" ("machine operator"). An "operator" is grouped in (f).

(g) Any "operator", after a craft training of four years, can be employed as "craftsmen". A "craftsman" is grouped in (g).

(h) Everyone, of different VE classes, i.e., (b)...(g), can gain experience and managerial ability. They then become "managers". A "manager" is grouped in (h).

(i) Any "labour", "operator", or "craftsman", after acquiring the level of "Senior Middle School Education" can be employed as a "clerk".

(j) After attaining the age of 65, everyone in the community shall leave his job and retire. These people are grouped as "retired", i.e., group (i).

3. Application of Graph Theory

As suggested in para.2, there are movements of the manpower between groups. With the introduction of a "child" group and the omission of the "retired" group, a graph showing the "simplified manpower system" with flowing of human resources is drawn in Fig.1.

It is noted that the graph has nodes (vortex) representing each manpower resource group, whilst the edges (arcs, or links) are used to represent the flow of manpower from one group to another. The edges are arrows, i.e., "directed edges", and the graph is a "directed graph" or "digraph".

4. Assumptions of the Simplified Manpower System

The system mentioned in para. 3 has the following assumptions:

(1) Annual birth equals to annual death. The population would therefore remain a constant.

(2) The number of both "annual birth" and "annual death" equals to a fraction of the total working population, i.e., no death is assumed for the group of "Child".

(3) No "retired" in the system.

(4) Number of people in each group, i.e., A, B, C, D, E, F, G and H are maintained the same.

(5) Death rate in each of the "working people" groups are the same.

(6) All "child" always attain "threshold of education" at the end of age 14.

(7) It takes a "labour" three years to attain the education level of a "clerk". Same period is required for an "operator" or a "craftsman" to become a "clerk".

(8) It takes a "clerk" 4 years to attain the education level of a "technician".

(9) It takes a "labour" 0.1 year to attain the skill level of an "operator".

(10) It takes an "operator" 4 years to attain the skill level of an "craftsman".

(11) It takes a "technician" 5 years to become a "professional".

(12) For every member of other "worker" groups to become a "manager", two years of job experience is required.

5. Characteristics of the Simplified System

Let A, B, C, D, E, F, G, H be the number of people in each group, and r be the birth rate with the Working Population as the base. Then the following equation are established:

As "child" is for the population of age 14 and below,

$A = 14\,r\,(B + C + D + E + F + G + H)$

Number of births annually = Number of deaths in a year = $r\,(B + C + D + E + F + G + H)$

Deaths in respective Working Groups are then rB, rC, rD, rE, rF, rG, rH respectively.

In order to maintain the population the same in each group, flow from one group to another are thus required.

The following equations show the relationship of IN and OUT at each knot.

$I0a = Iab$

$Iab = Ibc + Ibf + Ibh + Ibx$

$Ibc + Ifc + Igc = Icd + Ich + Icx$

$Icd = Ide + Idh + Idx$

$Ide = Ieh + Iex$

$Ibf = Ifc + Ifg + Ifh + Ifx$

$Ifg = Igc + Igh + Igx$

$Ibh + Ich + Idh + Ieh + Ifh + Igh = Ihx$

Assuming the following

Working Population = 3000000

death rate per "WorkingPopulation" = 0.03

$Ibh : Ich : Idh : Ieh : Ifh : Igh = 4 : 5 : 8 : 10 : 5 : 8$

$Ibc : Ifc : Igc = 8 : 1 : 1$

A solution is obtained with flows: ab=90000, bc=42192, bf = 29088, bh = 720, bx = 18000, fc = 5274, gc = 5274, cd = 24840, ch = 900, cx = 27000, de = 7200, dh = 1440, dx = 16200, eh = 1800, ex = 5400, fg = 15714, fh = 900, fx = 7200, gh = 1440, gx = 9000 and hx = 7200.

6. Directed Graph and Relevant Matrices

The "directed graph" of Fig.1 can be expressed with a number of matrices, i.e., adjacent matrix, weighted adjacent matrix, cut matrix, circuit matrix, etc. Algorithms derived from graph theory can be used to compute the solution using computer softwares.

7. Adjacence Matrix

The "adjacence matrix" is a matrix, with a digit "1" to show the movement from one vertex (on the left column) to another (on the top row), and "0" for none. Fig.2 shows the Adjacence Matrix for the simplified system.

8. Weighted Adjacence Matrix

The "flow rate" value from one group to another is "marked" on the edge. This figure is to replace "1" in the "adjacence matrix". This new matrix is the Weighted Adjacence Matrix of the "directed graph". Fig.3 is the "weighted adjacence matrix" of the simplified system.

9. Planning of Education/Training for Flowing Manpower

As indicated in para.2, 4 and 5, education/training should be needed for the following groups of "Working People" before they are appointed to work on the specific jobs:

(a) Senior Secondary Education, expecting 52740 qualified people to fill the jobs.

(b) Tertiary Education, expecting 24840 qualified people to fill the jobs.

(c) Training for Professionals, expecting 7200 qualified people to fill the jobs.

(d) Training for Managers, expecting 7200 qualified people to fill the jobs.

(e) Training for Operators, expecting 29088 qualified people to fill the jobs.

(f) Training for Craftsmen, expecting 15714 qualified people to fill the jobs.

(g) Lifelong education program for Operators and Craftsman, totaling 10548, to attain the standard of Senior Secondary Education.

(h) Lifelong education program for Operators and Craftsman, totaling 2109 (assuming 20% would require), to attain the standard of Tertiary Education.

10. Analogy to an Electric Circuit

The graph of Fig.1 can also be treated as a circuit diagram with the total current equivalent to the number of births per year. The flows in number per year from and to various groups can be regarded as currents. Arrows between "nodes" can be assigned resistance corresponding to the flow rates. The "birth node" is regarded as the electric source, whilst "death" (died) is earthed to complete the circuit. A circuit diagram shown in Fig.4 is a typical representation of the "Simplified System". With the parameters assigned, Kirchhoff's Current Law and Voltage Law can be applied to determine the flow between groups.

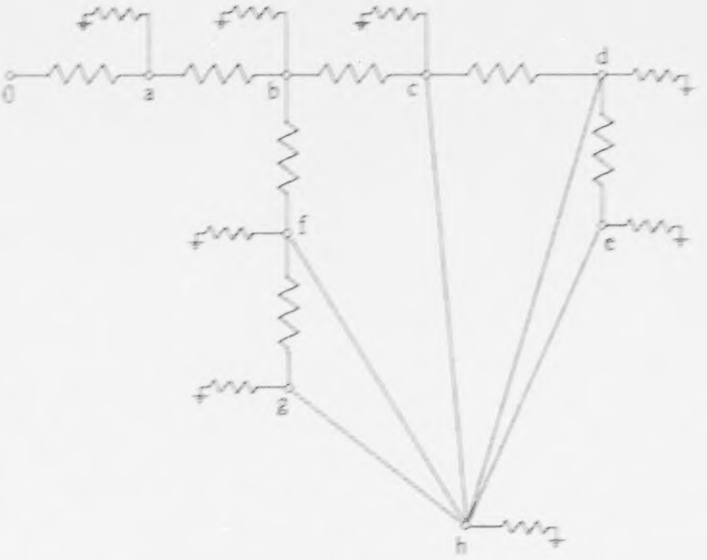

Fig.4 Electric Circuit Representation of the Simplified System

11. Application of Directed Graph Concept to Community Manpower Planning

Manpower planning of a Community requires the anticipation of demand in various group of employees. Use of Directed Graph approach can give an overview of the manpower requirement when statistics of the seven groups are available. Subsystem within a group, e.g., labour for construction industry or for other industries, can be established when needed. Such system approach would give more realistic figures than those derived from Manpower Projection Method which projects figures from historical data of particular group of personnels.

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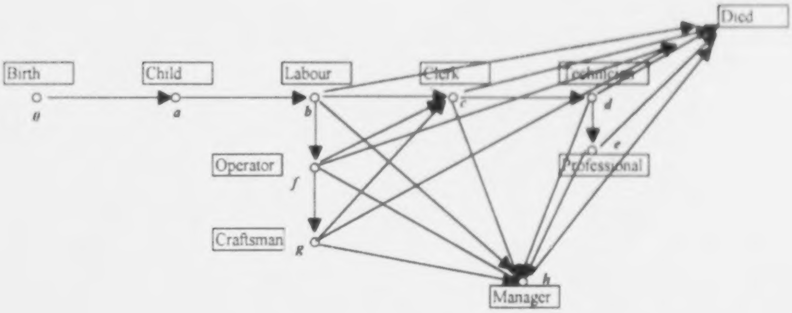
Died
Birth
Child
Labour
Clerk
Technician
o
a
b
c
d
e
Operator
f
Professional
Craftsman
g
h
Manager

Fig1 Movement of Human Resources in a Community

		0	a	b	c	d	e	f	g	h	x
Birth	0		1								
Child	a			1							
Labour	b				1			1		1	1
Clerk	c					1				1	1
Technician	d						1			1	1
Professional	e									1	1
Operator	f				1				1	1	1
Craftsman	g				1			1		1	1
Manager	h										1
Died	x										

Fig.2 Adjacence Matrix of the Directed Gragh representing the Simplified Manpower System

		a	b	c	d	e	f	g	h	x
Birth	0	90000								
Child	a									
Labour	b			42192			29088		720	18000
Clerk	c				24840				900	27000
Technician	d					7200			1440	16200
Professional	e								1800	5400
Operator	f			5274				15714	900	7200
Craftsman	g			5274					1440	9000
Manager	h									7200
Died	x									

Fig.3 Weighted Adjacence Matrix with "flow" figures as the Weights

OVERVIEW OF ASSESSMENT AND QUALITY ASSURANCE ON TVET AND A PROPOSAL FOR TURKEY

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Index: Assesment, Quality Assurance, Accreditation, Vocational Education.

Abstract: The purpose of this study is to search assessment and quality assurance principles, elements and criteria for the 21st century in terms of national and international competitiveness. Also this study makes suggestions to develop Turkish Vocational Education System in the new century.

The quality assurance system and accreditation of vocational education programmes is concerned with their characteristics, assessment, standards of excellence, and fitness for purpose.

2. INTRODUCTION

Quality Assurance System requires the range of quality issues within curriculum, institutional and staff development, linkage industry, commerce government, the unions, non governmental organisations and setting up the Quality Assurance and Assessment Centre[1].

Assessment is perhaps the most vital of all the processes in vocational education. A high quality assessment system provides the right emphasis on the different aspects of a course, gives students appropriate feedback, ensures that the right students are deemed to have learnt sufficient, and results in a qualification that is well understood. With the right procedures in place, students can be confident in the quality of their training, and employers can have confidence in qualified students.

Quality assurance systems monitors the way a centre carries out its responsibilities depends on the type of centre and the type of qualification being offered. Qualifications is assessed by different types internal and external assessment methods.

3. SOME QUALITY ASSURANCE AND ASSESSMENT SYSTEMS IN THE WORLD

3.1. Quality Assurance Systems in European Countries

There is not one body responsible for the recognition of vocational and Technical Education in Europe.

Each of the member states has it is own national coordinator responsible for the implementation of directives.

There is study to have common quality assurance system in European Union[2].

3.1.2. Quality Assurance and Assessment System in UK.

The UK Qualifications and Curriculum Authority (QCA) came into being on 1997. The new organization brings together the work of National Council for Vocational Qualifications (NCVQ) and the School Curriculum and Assessment Authority (SCAA) with additional powers and duties, which gives it an overview of curriculum, assessment and qualifications across the whole of education and training from pre-school to higher vocational education levels[3].

QCA is a non-departmental government body under Department for Education and Employment. In addition to government, QCA represents schools, colleges and training providers; regional bodies and professional associations; parents and school governors; other national bodies and awarding bodies, which offer a wide range of qualifications.

The Scottish Qualifications Authority (SQA) was formed the merger of The Scottish Vocational Education Council (SCOTVEC) and the Scottish Examination Board (SEB). It has taken over all the functions of both it is predecessors and is the national body responsible for most types of qualification in Scotland[3].

SQA's awards can be taken at five different levels, reflecting the increasing levels of difficulty, complexity, or specialization, in a profession or occupation in England, Wales and Northern Ireland, the corresponding qualifications are known as National Vocational Qualifications and Curriculum Authority (QCA) and there should be mutual recognition of SQA and QCA throughout the UK.

3.1.3. Quality Assurance and Assessment in the Germany.

Quality Assurance and Quality Improvement of Persons, Products and Processes is implemented and monitored by private and public organizations in Germany[4].

The basic process of quality assurance consists of four steps in German Quality System:

1. Standards committees develop and adapt standards,
2. Accrediting institutions approve standards,
3. Competent institutions assess quality,
4. Awarding bodies award accreditation or certification.

3.1.4. Quality Assurance System on Some European Countries

- The programmed of the French Baccalaureate professional, created in 1985, is not equivalent to the traditional academic programmers but is designed to be more attractive to students than the other vocational programmers.
- The Norwegian and Swedish reforms that established comprehensive upper secondary schools were introduced in 1994. Academic competencies were extended to vocational students by incorporating more general subjects into vocational programmers. Norwegian reforms affect both educational structures and curricula, While the Swedish reform is mainly structural in emphasizing unification.
- The Finnish " Youth education reforms" begun as an experiment in 1992, has broadened the range of qualifications available especially to vocational students[6].

There is no quality assurance system in European countries like UK. But European Union countries could like have system for international recognition of vocational qualifications[2].

3.2. Quality Assurance and Assessment System in USA

- In the United States, accreditation is voluntarily sought by institutions and is conferred by non-governmental bodies. There are two types of educational accreditation: institutional and specialized[7].

- An institutional accrediting body evaluates an entire institution in terms of its mission and accredits the institution as a whole. It reviews more than the educational offerings of the institution; it also assesses such characteristics as governance and administration, financial condition, admissions and student personnel processes, institutional resources, and relationships with outside communities. Institutional accreditation is provided by regional associations of schools and colleges (each named after the region in which it operates-Middle States, New England, North Central, Northwest, Southern, Western) and by several national associations (CHEA, AAHE, ACEnet, MHEC, AACC etc) that limit their scope to particular kinds of institutions. While independent of one another, the regional associations cooperate extensively and organize one another's accreditation.

3.3. Quality Assurance System in Australia and in New Zealand

In January 1995, Australia introduced a unified qualifications system for three education sectors; higher education, secondary education, technical and further education; and the previously varied "system" of qualifications has been replaced by one certificate, awarded at four levels, a diploma and an advanced diploma universities continue to issue diplomas and advanced diplomas along with degrees.

3.4. Quality Assurance System in Hong Kong

There are three bodies which offer the Higher Diploma (HD) which is the highest vocational qualification and is at the sub-degree level. The University Grant Committee (UGC) is responsible for seven university institutions –two of which (City University of Hong-Kong-City U and Hong Kong Polytechnic University –Poly U) offer H.D. The Vocational Training Council (VTC) has two Hong Kong Technical Colleges (TCs) which offer the H.D. and the Open Learning Institute of Hong Kong (OLI) is the third body. City U HD graduates are widely accepted in English Universities[8].

3.5. National Technical Qualification System in Korea

Korea introduced the National Qualification Testing (NTQT) system and scheme in 1967. The aim of the NTQT scheme is to officially test and recognize the occupational technical knowledge and skill standarts of individuals and thereby properly guide and direct the training and development of skilled technical manpower required by the business, industries and governmental organizations and at the same time to improve and chance to socia-economic status of skilled technical people:

There are three major qualification categories or divisions in the NTQT system. Engineer Group, Craftsman Group and Service or Business Group[9].

4. A PROPOSAL FOR QUALIFICATION SYSTEM IN TURKEY

In this section it will be given general information about Turkey, Turkish education system and proposed qualification system for Turkey.

4.1. Background Information about Turkish Education System

Turkish governments spend a lot of efforts to develop the Vocational Turkish education system since 1984.

General aspects of Turkish Education System is divided into two main sections as formal and non formal education. Formal education system is also divided in to two sections as a basic education (8 years), high school and higher education. Ministry of National Education is directly responsible basic education, high school and indirectly higher education. The Council of Higher Education is responsible for planning, coordination and supervision of higher education within the provision of higher education within the provisions set forth in Higher Education law[10].

Turkish governments got loan from World Bank and other loan institutions approximately 500 million USD between 1984-1997 years to develop vocational-technical teacher education at vocational-technical high schools and two years college levels. It could not be established quality assurance system and vocational technical teacher education center especially for two years college so far.

Higher Education in Turkey is at least two years education. Faculty and 4 years colleges education included higher education.

All Universities and Higher education institutions are affiliated with the Higher Education Council (YÖK).

The Council is an autonomous body with the authority and responsibility to administer the activities of all higher education institutions, including universities (faculties, institutes, and two years college.).

There are 75 Universities (53 state + 22 foundation universities), 457 faculties, 221 Institutes, 154 four year colleges, 422 two years colleges.

The number of students attending Universities and other higher education institution in 1999-2000 academic year is about 1 477 000 (43 % female).

The number of teaching staff in higher education is 62 223, comprising 7 980 full professors, 4 948 associate professors, 9 489 assistant professors, 7 482 lecturers, 5 427 language instructor, 25 174 research assistants, and 43 529 others[11].

4.2. Improving Quality of Vocational and Technical Education in Turkey

The rapid development in technology, the globalizations of markets and improvement in communication have affected the national economics of countries. New challenges and new demands are making necessary to reevaluate the educational system in Turkey. In order to meet new standards and set up the qualification system of national and international system in Turkey is being restricted[12].

There is not one body responsible for recognition of vocational qualifications at diploma and certificate education training in Turkey.

Higher Education Council is responsible of higher education (faculties, four-two year colleges etc.)

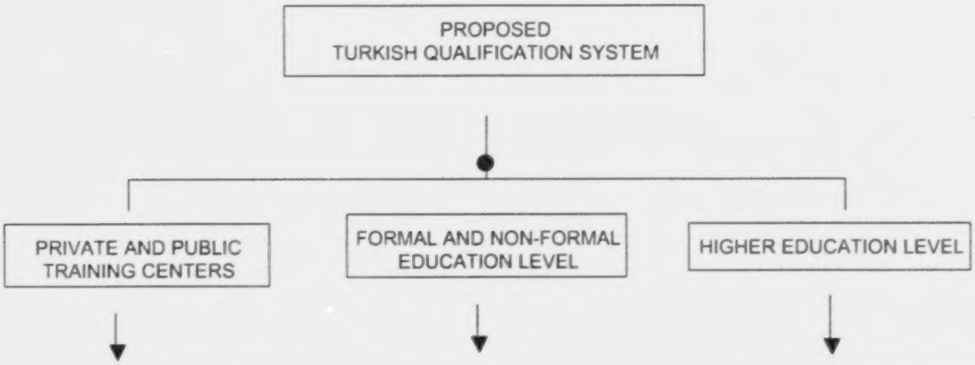
And Undersecretary of Education and five Deputy Undersecretaries coordinate and monitor the education programmes within the Ministry of National education (MONE). Several types of formal and informal industrial technical schools operate through the General Directorate of Technical and Vocational Education.

4.2.1. Level of Certificates in Proposed Turkish Qualification System (TQS)

Level one - Entry level,
Level two - Operative level,
Level three - Craft, technician or supervisory level,
Level four - Higher Technician Level,
Level five - Management or professional level [1]

4.2.2. Schematic Diagram of Proposed Turkish Qualification System

Proposed Turkish Qualification System can be seen in figure 2. Details (operation, procudures, stakeholders of system, assessment, awarding bodies etc.) of proposed system can be discussed later.


PROPOSED
TURKISH QUALIFICATION SYSTEM
PRIVATE AND PUBLIC TRAINING CENTERS
FORMAL AND NON-FORMAL EDUCATION LEVEL
HIGHER EDUCATION LEVEL

• Private Training Centers. • Public Training Centers. • Flexible, Customised Training Centers.	• Vocational and Technical High Schools • Adult Vocational Training Centers. • Apprenticeship Training Centers.	• Institutes. • Faculties • Four Year colleges. • Two Year Colleges. • Open-distance learning centers in University.
CERTIFICATE LEVELS • Level 5 • Level 4 • Level 3 • Level 2 • Level 1	DIPLOMA AND CERTIFACATES • Vocational-Technical High Schools (Diploma) • Adult and Apprenticeship Training Certificates (Level 3, Level 2, Level 1)	DIPLOMA AND CERTIFICATES • Doctoral, Master and Bachelor Science Degrees. • Advanced Diploma and Certificates (Level 5,4)

Figure 1. Proposed Turkish Vocational Qualification System

5. CONCLUSION AND RECOMMENDATION

- Turkey, like the rest of the world, is in transition to on information society through fundamental changes in its production systems and the related technology base.
- Essential principles of restructuring vocational and technical education are: formation of new system based on the business/industry-school/college cooperation, leading to a certificate and/or diploma education, Turkey needs very urgent to establish quality assurance system like UK, Taiwan, Hong-Kong, Australia, Korea, USA, Germany etc.
- It should be developed open and distance learning centers to educate the rest of the young people whom have not chance to enroll the universities and not to get high school education.

- It should be opened vocational technical education centers to be trained the instructor, and teacher to teach them new technology, knowledge in their occupational areas and a foreign language and basic level computer education with period of the 5 years.
- Programs should be designed on a modular basis (like UK), leading to diploma and certificates which will provide for horizontal and vertical transitions between T.Y. colleges and T.Y. colleges and from two years colleges to faculties.
- Vocational and technical training programmes should be designed to prepare students for employment in conformity with international standarts, to facilitate the integration process with Europe and developed countries.
- Graduates from vocational and technical training programmes should be able to enter two years college and curriculum of programmes should be so designed to integrate between vocational high school and two years colleges and from two years college to faculties.

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